STR-4800/4800SD

STR-4800SD
US Model
Canadian Model
STR-4800
AEP Model
UK Model
E Model

STR-4800SD
DOLBY FM

STR-4800

* STR-4800SD is equipped with DOLBY FM circuit. 'Dolby' and the double-D symbol are the trade marks of Dolby Laboratory Inc. Noise reduction system manufactured under license from Dolby Laboratory Inc.

FM STEREO/FM-AM RECEIVER

SPECIFICATIONS

GENERAL

Power Requirements: 120 V ac, 60 Hz (US and Canadian Model)
110, 127, 220 or 240 V ac ~ adjustable, 50/60 Hz (AEP, UK, E Model)

Power Consumption: 145 W (US Model)
240 VA (Canadian Model)
270 W (AEP, E Model)
290 W (UK Model)

AC Outlets: 2 unswitched, total 200W (US and Canadian Model)

Dimensions: Approx.
490 (w) x 170 (h) x 415 (d) mm
19 1/4 (w) x 6 9/16 (h) x 16 1/4 (d) inches
Including projecting parts and controls

Weight: Approx.
13.9 kg, 30 lb 10 oz (net)
Approx.
16.2 kg, 35 lb 11 oz (with shipping carton)

FM SECTION

Tuning Range: 87.5 MHz –108 MHz

Intermediate Frequency: 10.7 MHz

Sensitivity at 50 dB Quieting: 4 μV (MONO)
45 μV (STEREO)

Sensitivity at 46 dB Quieting: (40 kHz deviation) 50 μV (STEREO) (AEP, UK, E Model)

Usable Sensitivity: IHF 1.9 μV (MONO)
1.7 μV, S/N = 26 dB (40 kHz deviation) (AEP, UK, E Model)

S/N Ratio: 73 dB (MONO)
68 dB (STEREO)

Harmonic Distortion: at 100 Hz
0.2 % (MONO)
0.4 % (STEREO)
at 1 kHz
0.2 % (MONO)
0.4 % (STEREO)
at 10 kHz
0.2 % (MONO)
0.8 % (STEREO)

IM Distortion: 0.2 % (MONO)
0.4 % (STEREO)

Separation: 35 dB at 100 kHz
40 dB at 1 kHz
35 dB at 10 kHz

Frequency Response: 30 Hz–15 kHz $^{+0.2}_{-2.0}$ dB (US and Canadian Model)
40 Hz – 12.5 kHz $^{+0.2}_{-1.0}$ dB (AEP, UK, E Model)

Capture Ratio: 1.5 dB

AM Suppression Ratio: 54 dB

Image Response Ratio: 40 dB

IF Response Ratio: 90 dB

Spurious Response Ratio: 75 dB

RF Intermodulation: 60 dB

Sub-carrier Product Ratio: 60 dB

Muting Threshold: Approx. 5 μV

— continued on next page —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®
SERVICE MANUAL

STR-4800/4800SD

AM SECTION

Tuning Range: 530 kHz–1,605 kHz

Intermediate Frequency: 455 kHz (US, Canadian Model)
468 kHz (AEP, UK, E Model)

Usable Sensitivity: 250 μV/m, built-in ferrite-rod antenna
100 μV, external antenna at 1,000 kHz

S/N Ratio: 50 dB at 50 mV/m

Harmonic Distortion: 0.5 % at 50 mV/m, 400 Hz

Selectivity: 35 dB

Image Response Ratio: 40 dB at 1,000 kHz

IF Response Ratio: 35 dB at 1,000 kHz

AUDIO AMPLIFIER SECTION

Continuous RMS Power Output: (rated output) (less than 0.1 % THD)
Both channels driven simultaneously at 20–20,000 Hz
35 + 35 W (8 Ω)
At 1 kHz
40 + 40 W (8 Ω) (AEP, E Model)
50 + 50 W (4 Ω) (UK Model)
According to DIN 45500
40 + 40 W (8 Ω) (AEP, E Model)
45 + 45 W (4 Ω) (UK Model)

Dynamic Power Output: (IHF constant power supply method)
120 W (8 Ω) (AEP, UK, E Model)
170 W (4 Ω) (AEP, E Model)

Power Bandwidth: 10–35,000 Hz, IHF (AEP, UK, E Model)

Damping Factor: 35 at 1 kHz (8 Ω)

Harmonic Distortion: Less than 0.1 % at rated output } (AEP, UK, E Model)
Less than 0.1 % at 1 W output }

IM Distortion: (60 Hz : 7 kHz = 4 : 1)
Less than 0.1 % at rated output
Less than 0.1 % at 1 W output

Residual Noise: Less than 0.1 μW

Frequency Response:

PHONO	RIAA equalization curve ± 1 dB
AUX TAPE 1, 2 REC/PB (input) (AEP, UK, E Model)	10 – 30,000 Hz $^{+0.5}_{-3.0}$ dB

Input Sensitivity, Impedance and S/N Ratio:

	Sensitivity	Impedance	S/N	Weighting network
PHONO	2.5 mV	50 kΩ	70 dB	A
AUX TAPE 1, 2 REC/PB (AEP, UK, E Model)	250 mV	100 kΩ	90 dB	A

Note: Measured with rated output power into 8 Ω loads (both channels driven simultaneously) at 1 kHz.

Output Level and Impedance:

	Output level	Impedance	Input level
REC OUT 1, 2	250 mV	4.7 kΩ	PHONO 2.5 mV
REC/PB (AEP, UK, E Model)	40 mV	82 kΩ	AUX, TAPE 1, 2, REC/PB (AEP, UK, E Model) 250 mV

HEADPHONES: Accepts 8–10,000 Ω headphones.

SPEAKER:
4–16 Ω speakers are suitable. (for the countries except for the U.K.)
8 Ω or more speakers are suitable (UK Model)

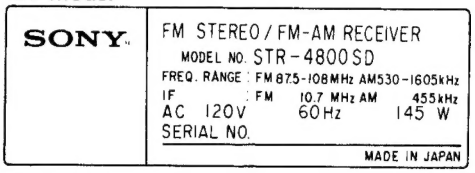
Tone Controls: BASS ±10 dB at 100 Hz
TREBLE ±10 dB at 10 kHz

Filters: HIGH 6 dB/oct. above 6 kHz
LOW 6 dB/oct. below 35 Hz

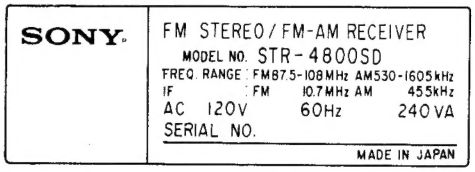
Acoustic Compensator: (att. 30 dB)
LOW +9 dB at 50 Hz
PRESENCE +3 dB at 1 kHz
LOUDNESS +10 dB at 50 Hz
+3 dB at 10 kHz

MODEL IDENTIFICATION
– Specification Labels –

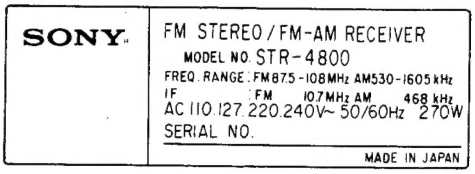
US model



Canadian model



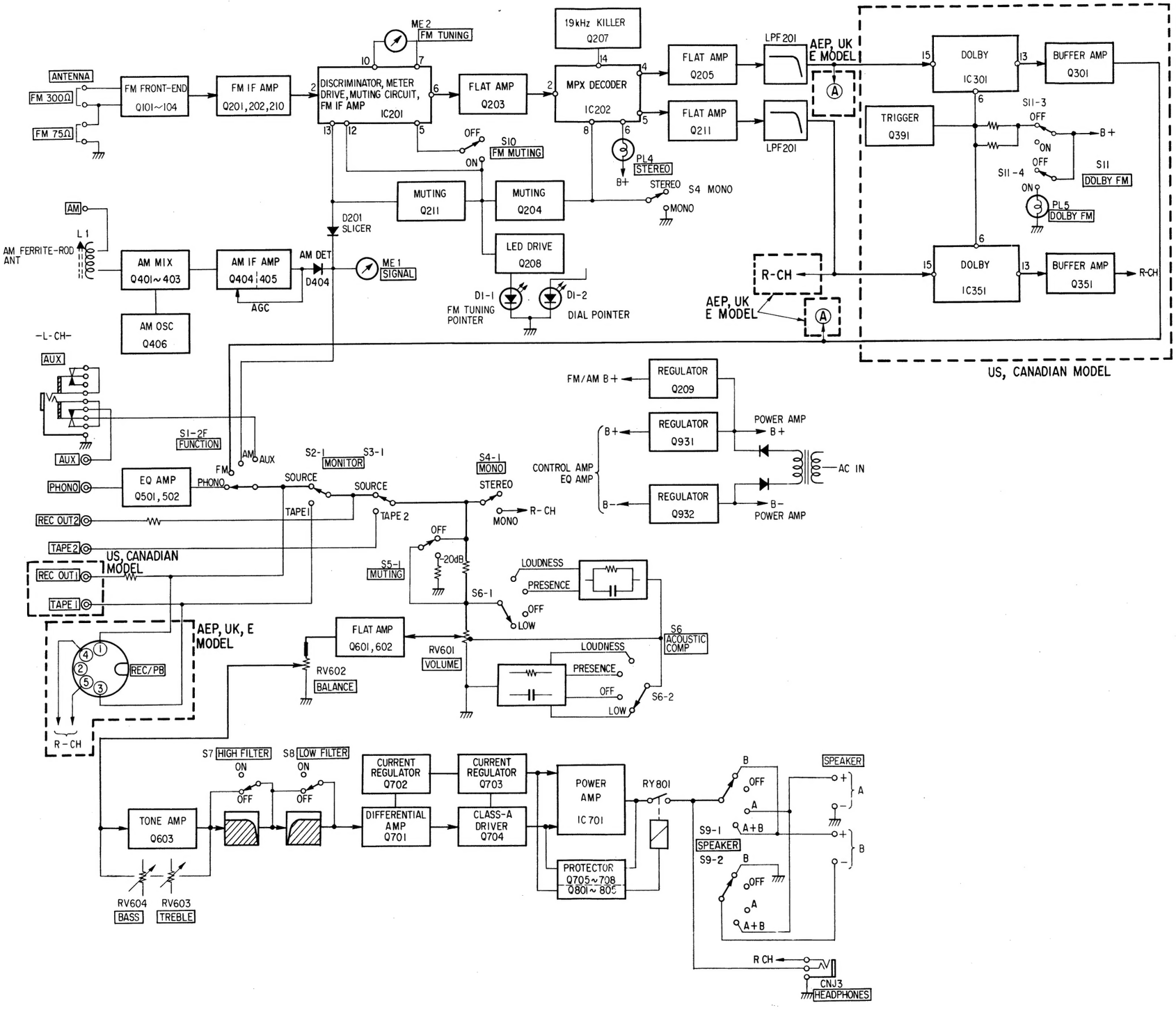
AEP/E model



UK model

SECTION 1

BLOCK DIAGRAM

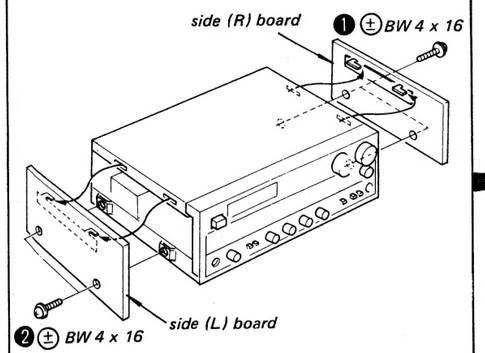


SECTION 2

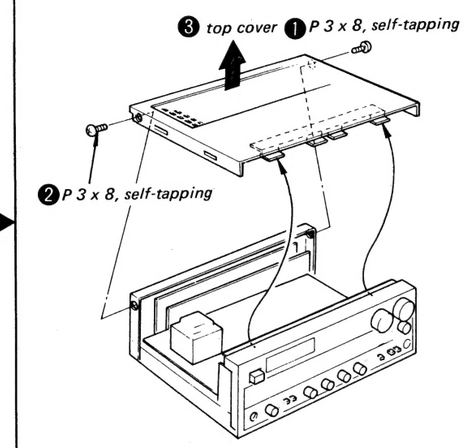
DISASSEMBLY AND REPLACEMENT

2-1. REMOVAL

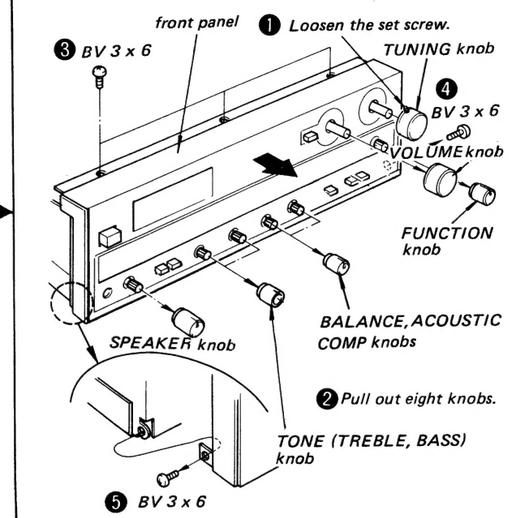
SIDE BOARDS REMOVAL



TOP COVER REMOVAL



FRONT PANEL REMOVAL



CIRCUIT BOARD REMOVAL

TONE Control, AUX Jack and HEADPHONES Jack Circuit Boards Removal.

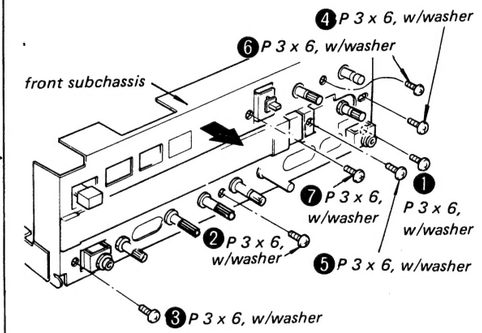
- Remove three screws (❶ – ❸). After removing the circuit boards from the front subchassis, replace the defective switch or jack.

FUNCTION Switch Circuit Board Removal

- Remove two screws (❹ , ❺). After removing the circuit board from the front subchassis replace the defective switch.

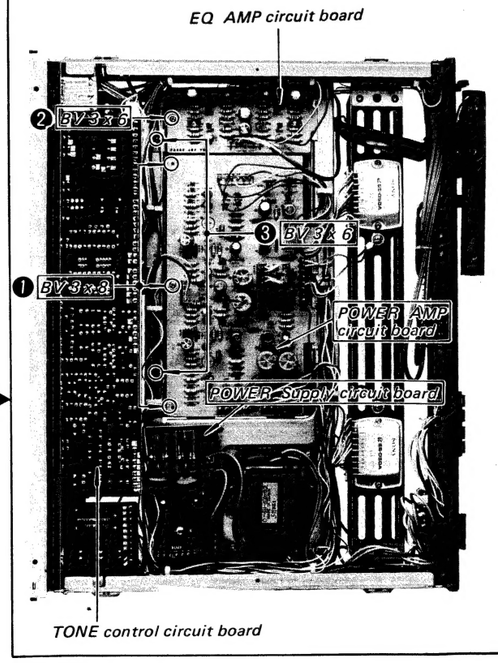
VOLUME CONTROL Circuit Board Removal

- Remove two screws (❻ , ❼). After removing the circuit board from the front suchassis, replace the defective control.

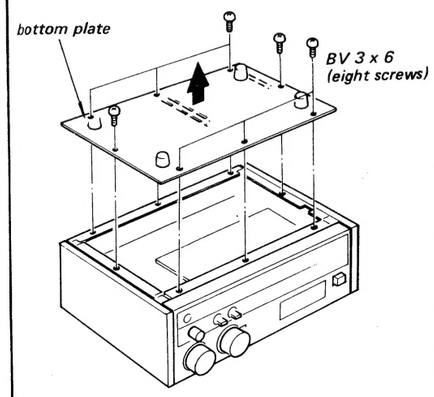


CIRCUIT BOARD REMOVAL

❶ : POWER AMP Circuit Board Removal
❷ : EQ AMP Circuit Board Removal



BOTTOM PLATE REMOVAL



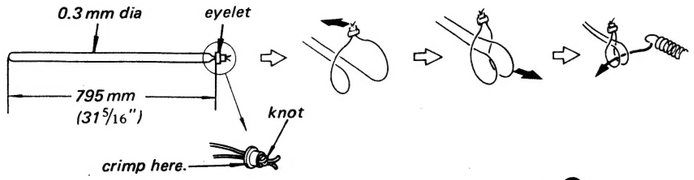
CIRCUIT BOARD REMOVAL

Replacement of the Components on the FM/AM Circuit Board.

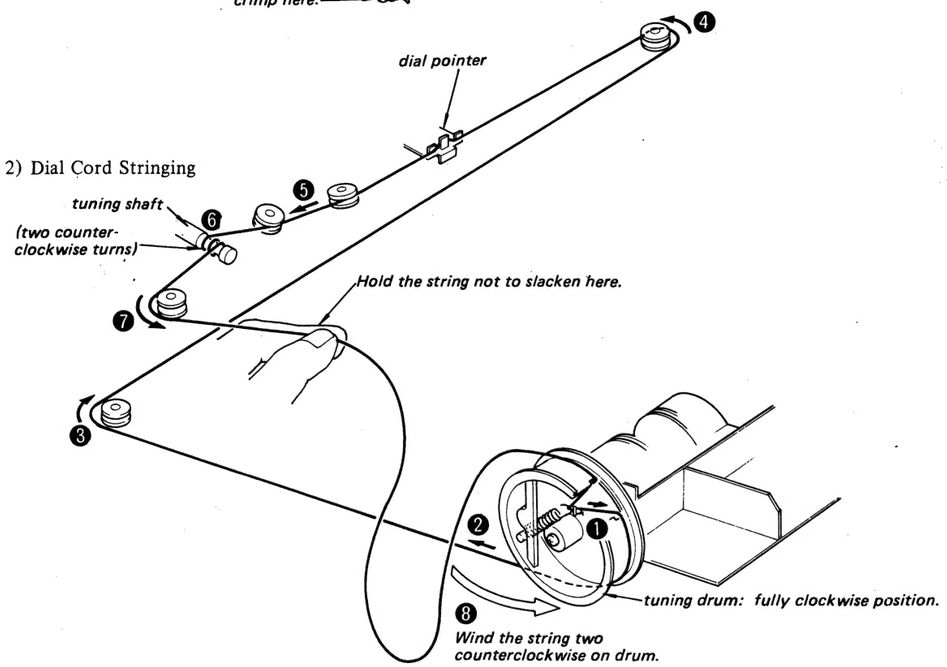
1. Remove two BV 3 x 6 screws ❸ securing the shield plate to the chassis.
2. It is possible to unsolder the components on the front-end circuit board.

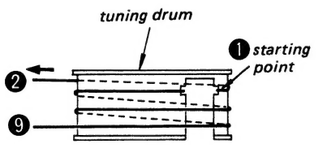
2-6. DIAL CORD STRINGING

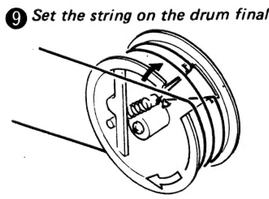
1) Dial Cord Length



2) Dial Cord Stringing







SECTION 3

ALIGNMENTS AND ADJUSTMENTS

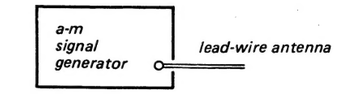
FM FREQUENCY COVERAGE AND TRACKING ADJUSTMENT

Never attempt alignment of the fm front-end section for the fm frequency coverage and tracking adjustment. If the fm frequency coverage and tracking adjustments are required, consult the factory service center.

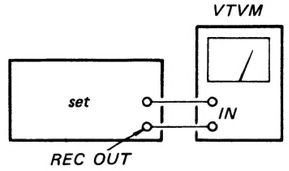
AM FREQUENCY COVERAGE AND AM TRACKING ADJUSTMENT

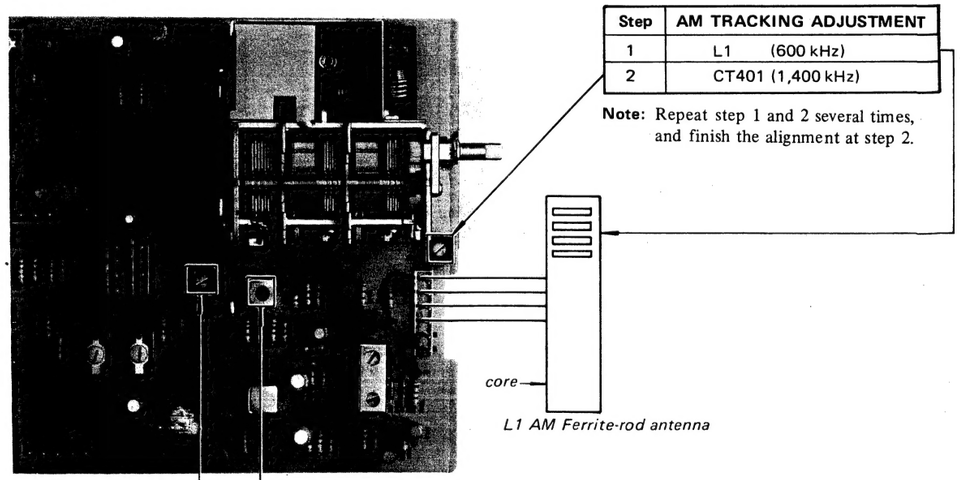
Test setup:

FUNCTION selector: AM



Modulation: 400 Hz, 30%





Step	AM TRACKING ADJUSTMENT
1	L1 (600 kHz)
2	CT401 (1,400 kHz)

Note: Repeat step 1 and 2 several times, and finish the alignment at step 2.

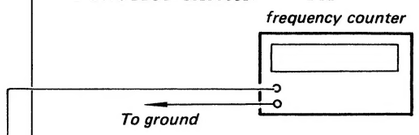
Step	AM FREQUENCY COVERAGE ADJUSTMENT	DIAL INDICATION
1	L403 (520 kHz)	Lower End
2	CT402 (1,680 kHz)	Upper End

Note: Repeat step 1 and 2 several times, and finish the alignment at step 2.

MPX ADJUSTMENT

Setup:

FUNCTION selector: FM



FM Signal Generator Setting:

Carrier frequency:	98 MHz
Modulation:	no modulation
Output level:	3.2 mV (70 dB)

Procedure:

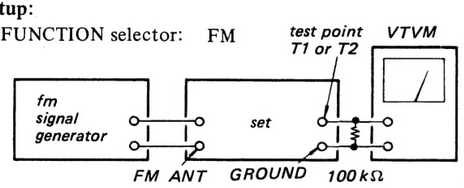
Adjust RT203 for 19 kHz ± 100 Hz on the counter.

Note: Perform this adjustment after the power switch turned ON and one minute passed.

FM OUTPUT LEVEL ADJUSTMENT

Setup:

FUNCTION selector: FM



FM Signal Generator Setting:

Carrier frequency:	98 MHz
Modulation:	400 Hz, 75 kHz deviation (100 %)
Output level:	1 mV (60 dB)

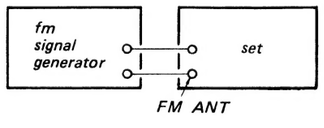
Procedure:

Adjust RT202 for 870 mV on the VTVM.

SIGNAL METER CALIBRATION

Setup:

FUNCTION selector: FM



FM Signal Generator Setting:

Carrier frequency:	98 MHz
Modulation:	no modulation
Output level:	3.2 mV (70 dB)

Procedure:

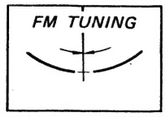
Tune the set to 98 MHz and adjust RT201 for specified pointer position on the SIGNAL meter as shown.

DISCRIMINATOR ALIGNMENT

Procedure:

FUNCTION selector: FM

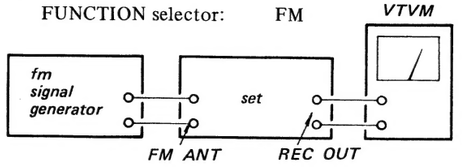
1. Detune the set.
2. Adjust the secondary side core of IFT201 for zero center on the TUNING meter as shown.



FM IF ALIGNMENT

Setup:

FUNCTION selector: FM

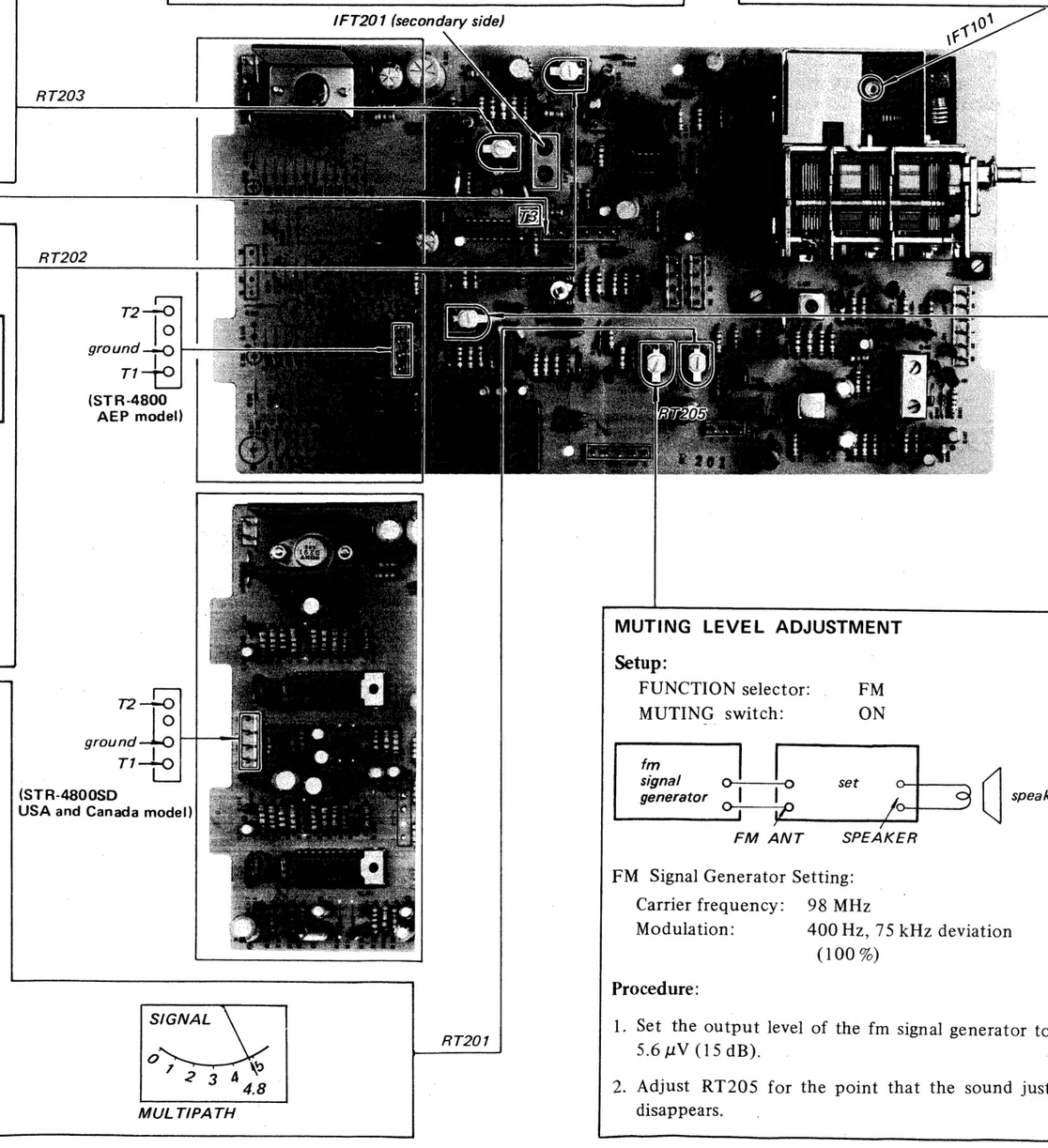


FM Signal Generator Setting:

Carrier frequency:	98 MHz
Modulation:	400 Hz, 75 kHz deviation (100 %)

Procedure:

Tune the set to 98 MHz and adjust IFT101 for maximum reading on the VTVM.



MUTING LEVEL ADJUSTMENT

Setup:

FUNCTION selector: FM

MUTING switch: ON

FM Signal Generator Setting:

Carrier frequency:	98 MHz
Modulation:	400 Hz, 75 kHz deviation (100 %)

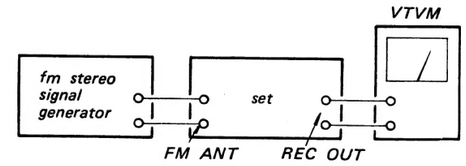
Procedure:

1. Set the output level of the fm signal generator to 5.6 μV (15 dB).
2. Adjust RT205 for the point that the sound just disappears.

FM STEREO SEPARATION ADJUSTMENT

Setup:

FUNCTION selector: FM



FM Stereo Signal Generator Setting:

Carrier frequency:	98 MHz
Output level:	1 mV (60 dB)
Mode:	Stereo
Audio (400 Hz) Mode:	67.5 kHz (90 %)
Pilot (19 kHz) Mode:	7.5 kHz (10 %)

Procedure:

FM stereo signal generator modulated channel	VTVM connection	VTVM reading
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT204 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT204 for minimum reading.

Stereo separation: Ⓐ – Ⓑ , Ⓒ – Ⓓ .

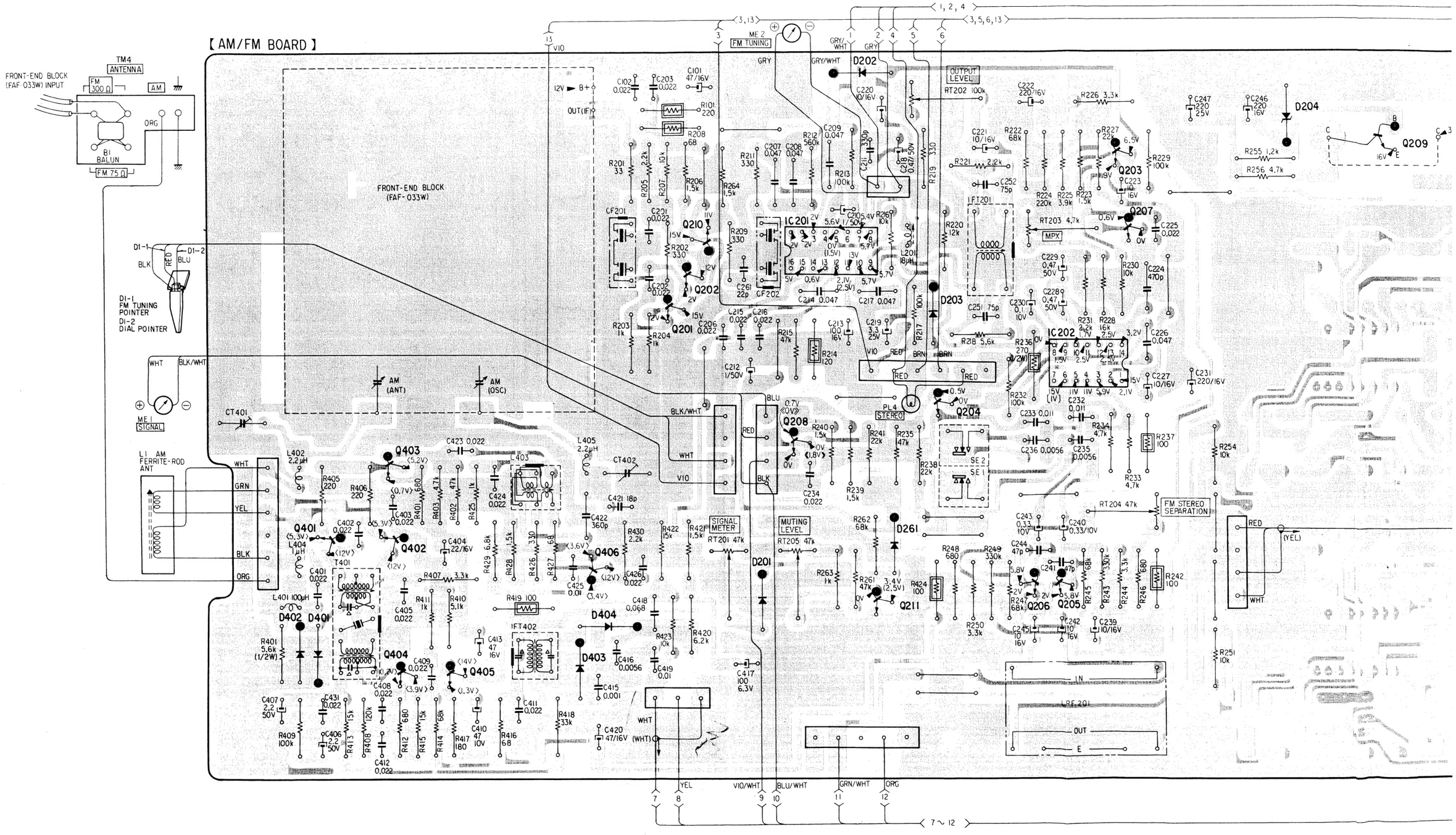
The difference of the stereo separation between Ⓐ – Ⓑ and Ⓒ – Ⓓ should be within 3 dB.

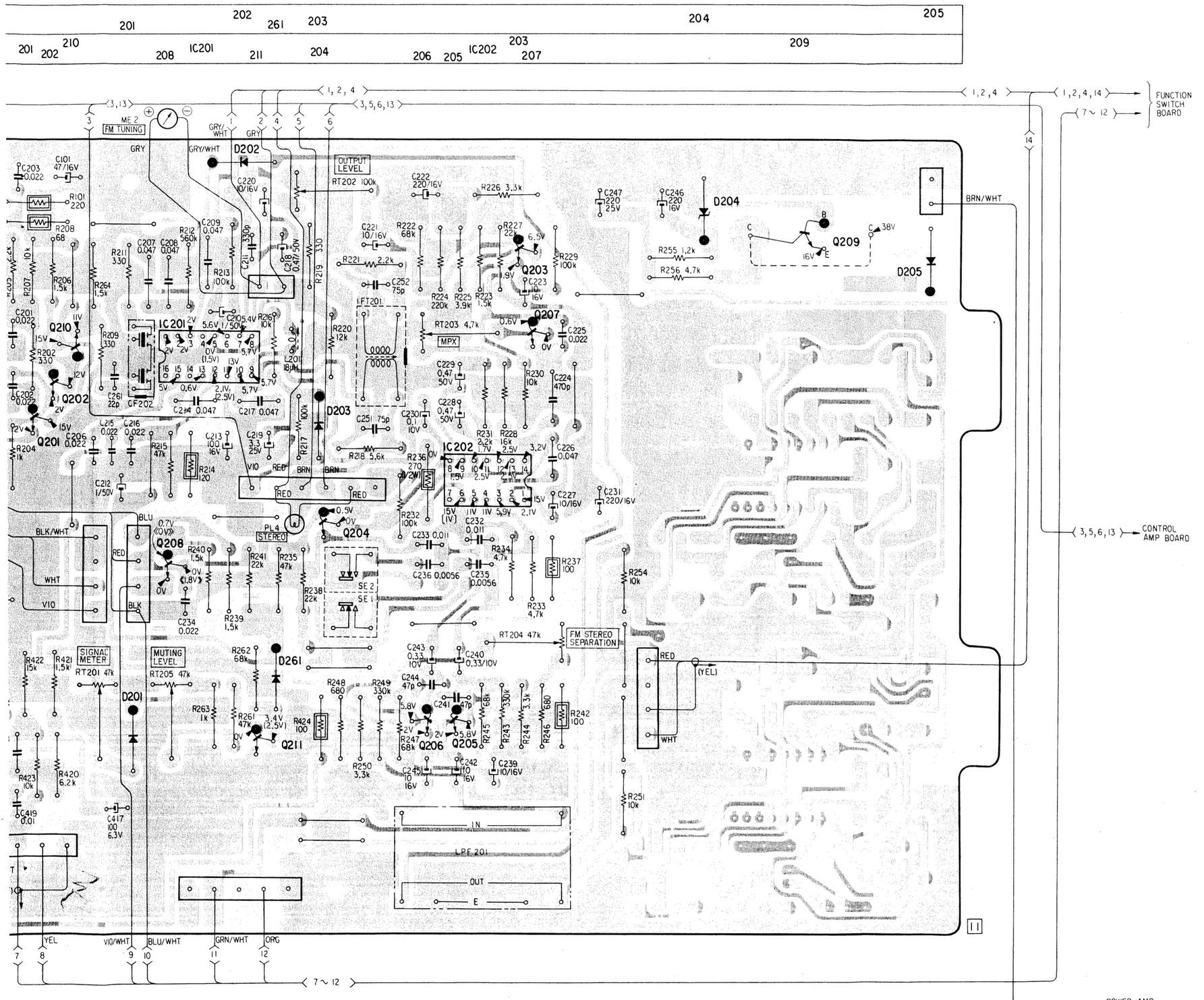
STR-4800 (AEP, UK, E Model)

4-1. MOUNTING DIAGRAM — Front-End, FM/AM Circuit Boards —

— Conductor Side —

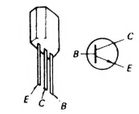
D	402,401 403 404 201 202 210 201 202 261 203 204
Q,IC	401 403 402 404 405 406 201 208 IC201 211 204 206 205 IC202 203 207 209



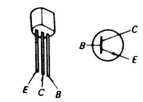


Q201, 202, 210, Q410 : 2SC403

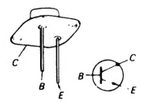
Q403 : 2SC632A



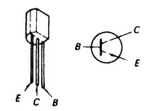
Q204, 207, 208, 211 : 2SC945



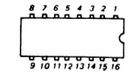
Q209: 2SD291



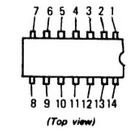
Q405, 406: 2SC710



IC201: HA1137W



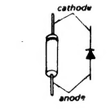
IC202: HA1156



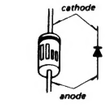
D201, 202, 261, 401, 402 : 1T40

D203, 403, 404: 1T22A

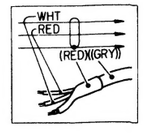
D205: 10E2



D204: EQA01-16R



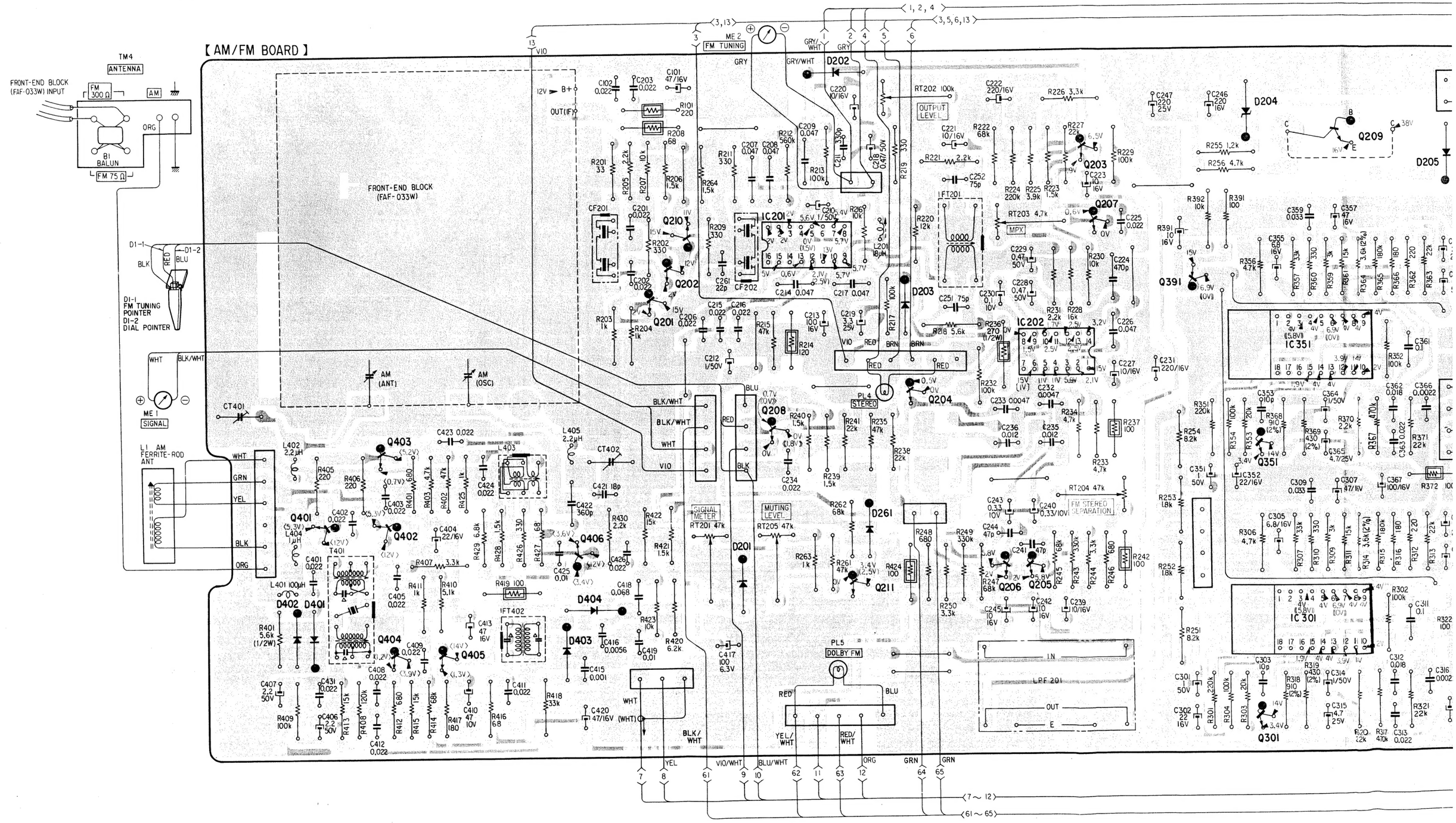
Note: ● B+ pattern

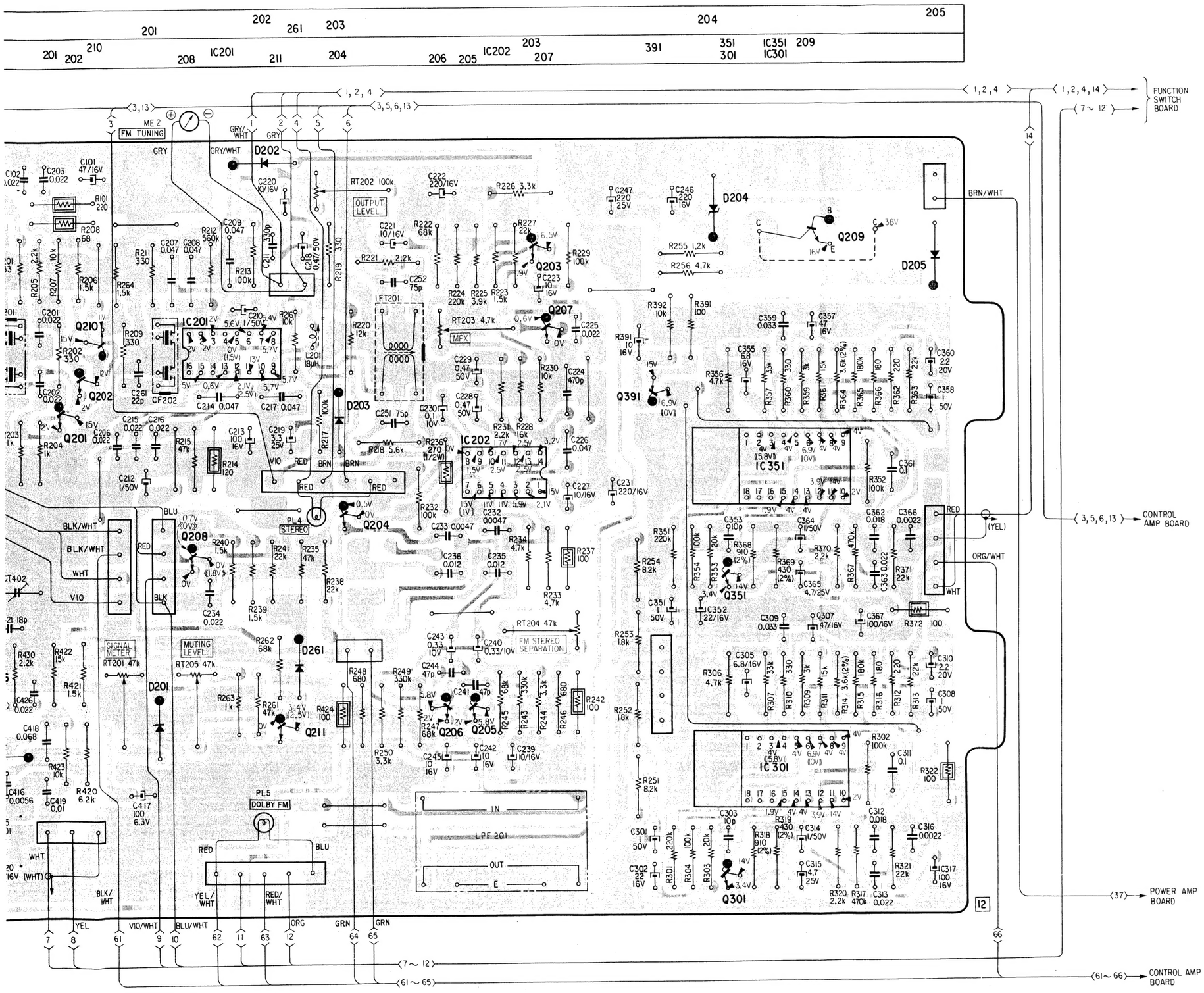


STR-4800SD (US, Canadian Model)

4-2. MOUNTING DIAGRAM – Front-End, FM/AM Circuit Boards –

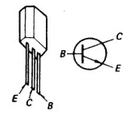
– Conductor Side –



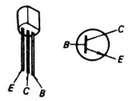


Q201, 202, 210, Q410 } : 2SC403

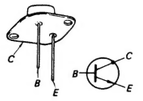
Q403 : 2SC632A



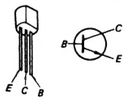
Q204, 207, 208, 211 } 2SC945



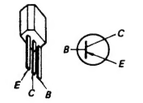
Q209: 2SD291



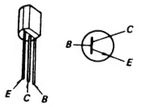
Q301, 351: 2SC900



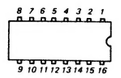
Q391: 2SA678



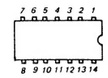
Q405, 406: 2SC710



IC201: HA1137W

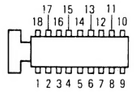


IC202: HA1156



(Top view)

IC301, 351: CX064

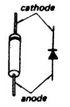


(Top view)

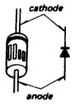
D201, 202, 261, 401, 402 } 1T40

D203, 403, 404: 1T22A

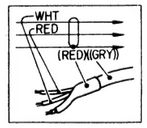
D205: 10E2



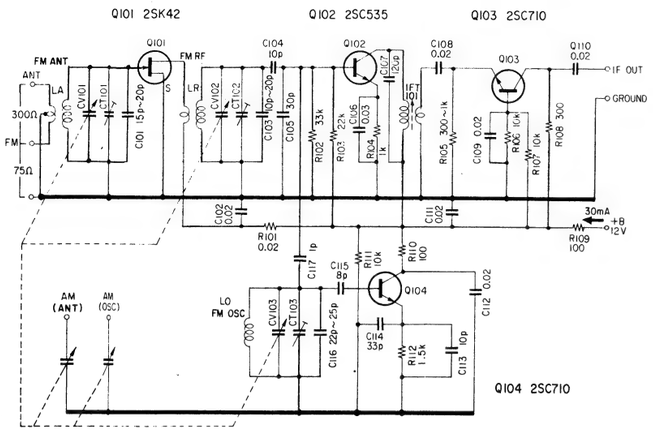
D204: EQA01-16R

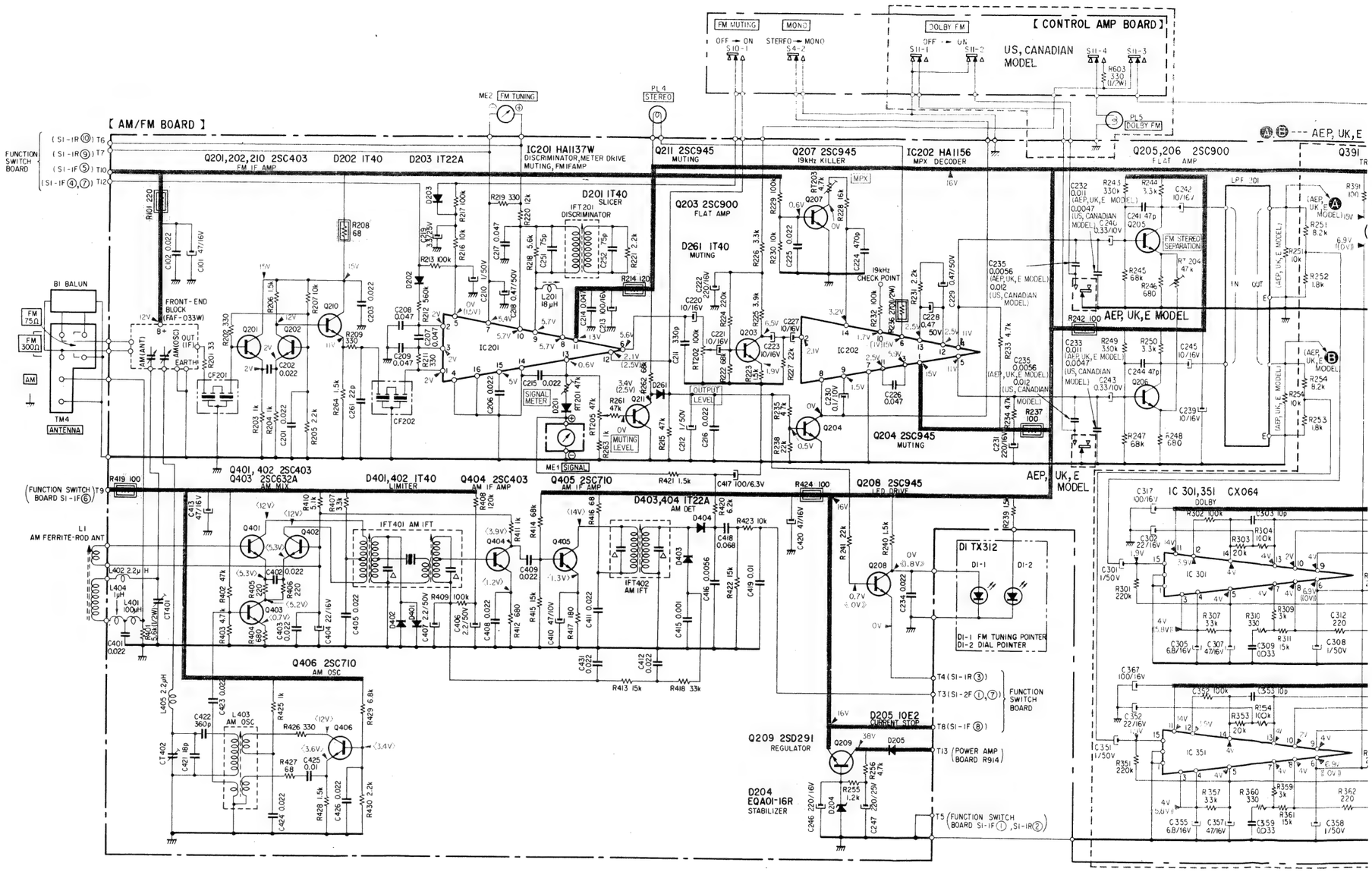


Note: ● B+ pattern

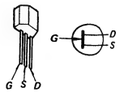


4-3. SCHEMATIC DIAGRAM — Front-End, FM/AM Section —

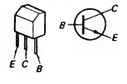




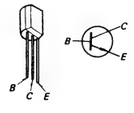
Q101: 2SK42

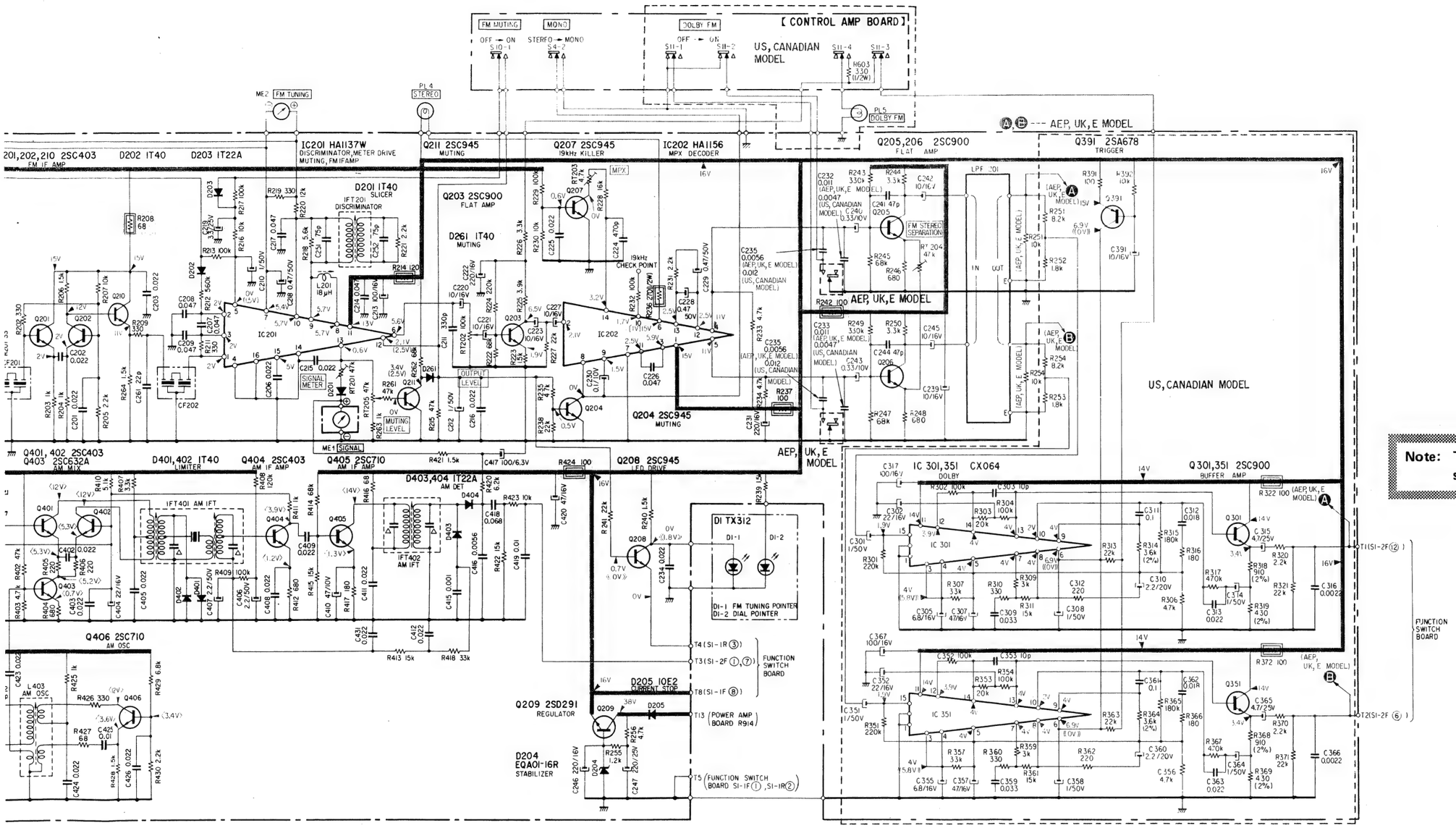


Q102: 2SC535



Q103, 104: 2SC710





Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p = μμF.
- All resistors are in Ω, ¼W, unless otherwise noted. k = 1,000 M = 1,000 k
- △ indicates internal components.
- ⏚ indicates chassis ground.
- ▭ indicates a nonflammable resistor.
- ▬ indicates B+ circuit.
- Voltage are measured by VOM (20 kΩ/v) in DC with respect to ground unless otherwise noted.
  - ⩽ ⩾: FM (monaural or stereo)
  - ( ): FM MUTING (S10) — ON (Detuned in FM)
  - (( )): DOLBY FM (S11) — ON (Detuned in FM)
  - [ ]: FM STEREO
  - < >: AM (Detuned)
  - no mark: FM (Detuned)
- Voltage variations may be noted due to normal production tolerances.
- Switch Mode:

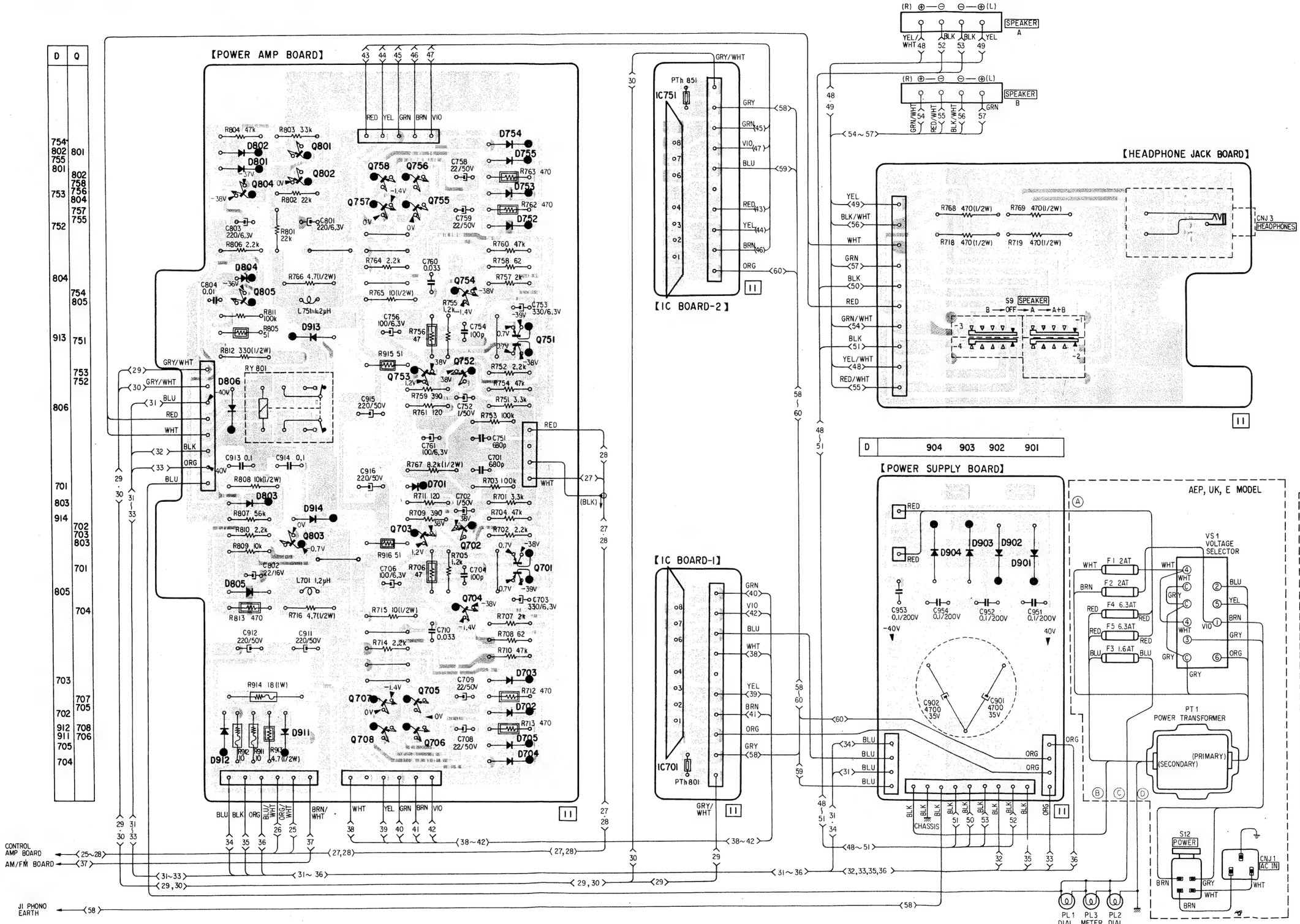
Ref. No.	Switch	Position
S4	MONO	STEREO
S10	FM MUTING	OFF
S11	DOLBY FM	OFF

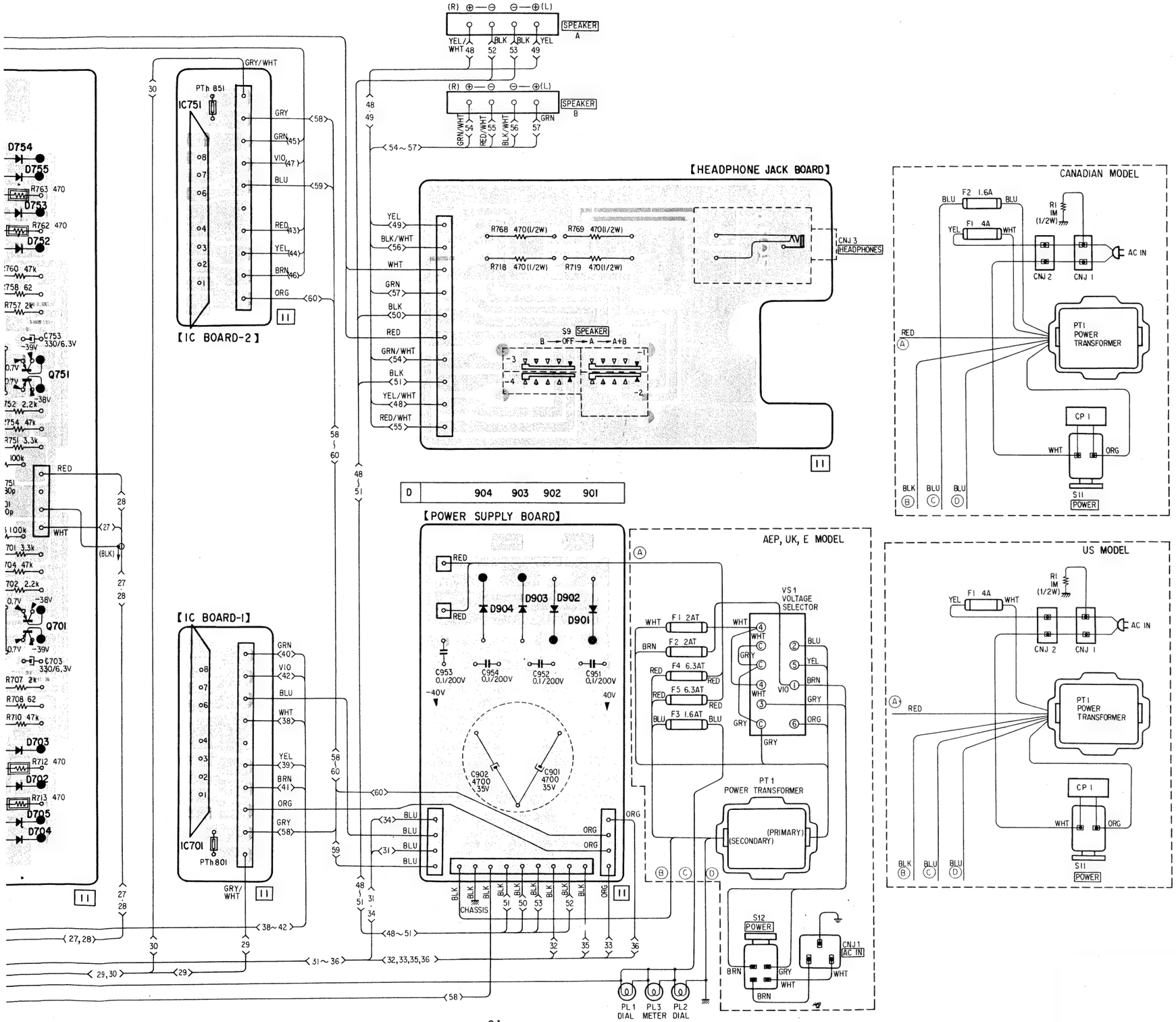
Note: The components identified by shading are critical for safety. Replace only with part number specified.

STR-4800/4800SD ST

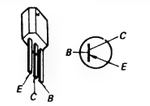
4-4. MOUNTING DIAGRAM — Power Amp, IC, Headphone Jack, Power Supply Circuit Boards —

— Conductor Side —



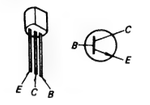


Q701, 751: 2SC705

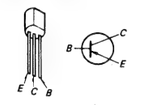


Q703, 753: 2SA896

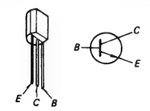
Q704, 754, 805: 2SC1811



Q705, 708, 755, 758, 801～803: 2SA735

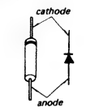


Q706, 707, 756, 757, 804: 2SC1364

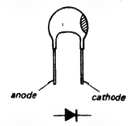


D702～705, 752～755, 801～803, 805, 806: 1S1555

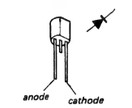
D911, 912: 10E2



D701: VD1221

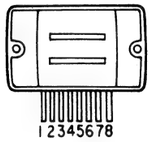


D804: 1T243M



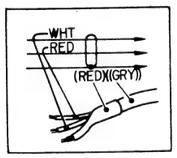
D901～904: U05E

IC701, 751: SS050A

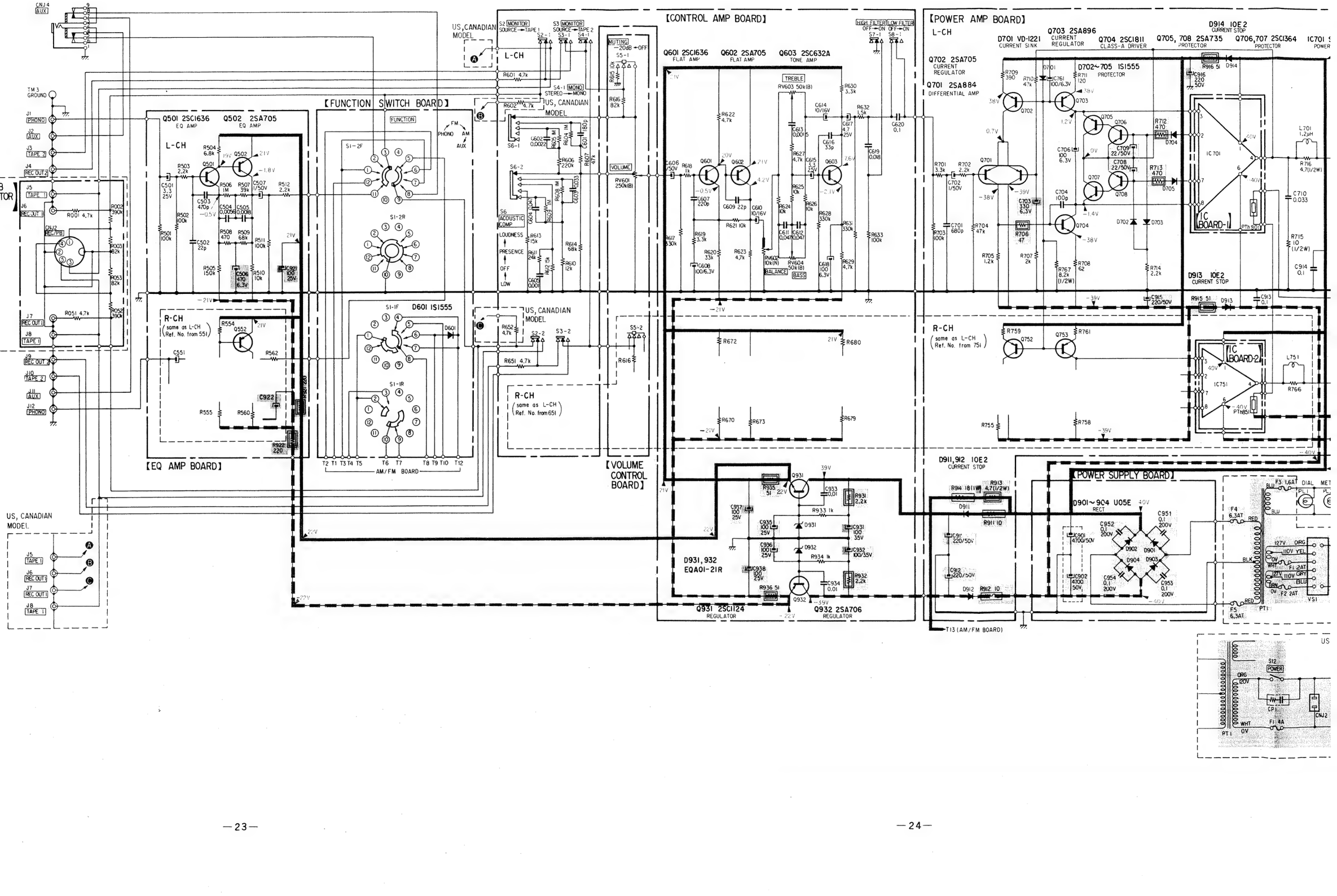


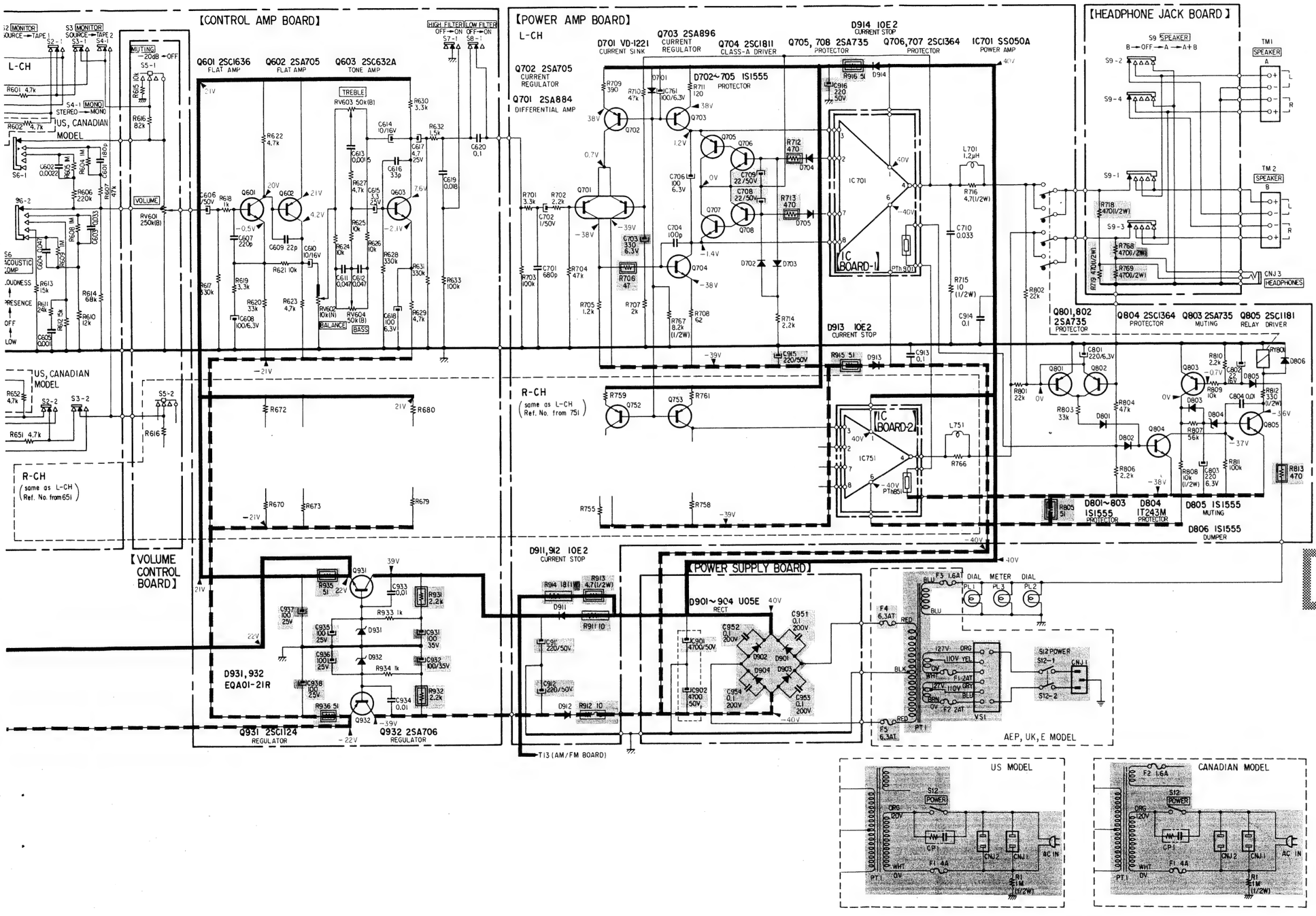
Note:

- B+ pattern
- B- pattern



4-5. SCHEMATIC DIAGRAM — Amplifier Section —





Note:

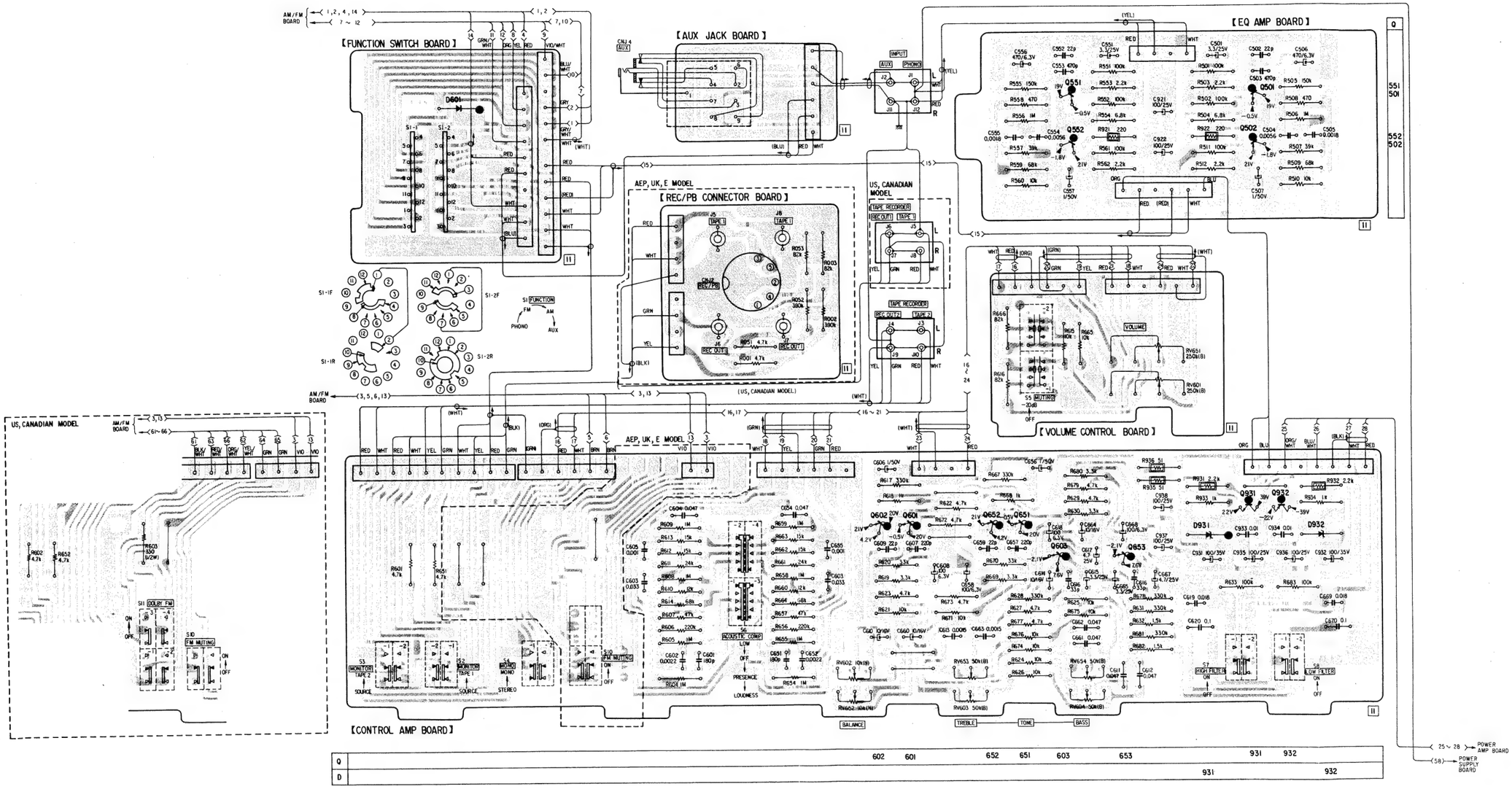
- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p = μμF.
- All resistors are in Ω, ¼ W, unless otherwise noted. k = 1,000 M = 1,000 k
- ⏚ indicates chassis ground.
- ▭ indicates a nonflammable resistor.
- ⏦ indicates a fusible resistor.
- ▬ indicates B+ circuit.
- ▬ ▬ ▬ indicates B− circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings taken under no-signal conditions with a VOM (20 kΩ/v). Measure the voltages after the power switch turned ON and 4—6 minutes passed for warm-up the set.
- Voltage variations may be noted due to normal production tolerances.
- Switch Mode:

Ref. No.	Switch	Position
S1	FUNCTION	PHONO
S2	MONITOR	SOURCE
S3	MONITOR	SOURCE
S4	MONO	STEREO
S5	MUTING	OFF
S6	ACOUSTIC COMP	LOW
S7	HIGH FILTER	OFF
S8	LOW FILTER	OFF
S9	SPEAKER	B
S10	FM MUTING	OFF
S12	POWER	OFF

Note: The components identified by shading are critical for safety. Replace only with part number specified.

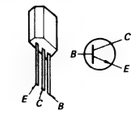
4-6. MOUNTING DIAGRAM — Function Switch, AUX Jack, REC/PB Connector, EQ Amp, Volume Control, Control Amp Circuit Boards —

— Conductor Side —

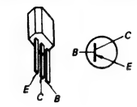


Q501, 551 / 601, 651 } 2SC1636

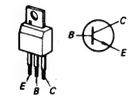
Q603, 653: 2SC632A



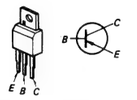
Q502, 552 / 602, 652 } 2SA705



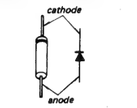
Q931: 2SC1124



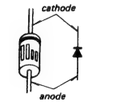
Q932: 2SA706



D601: 1S1555

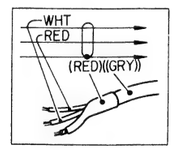


D931, 932: EQA01-21R

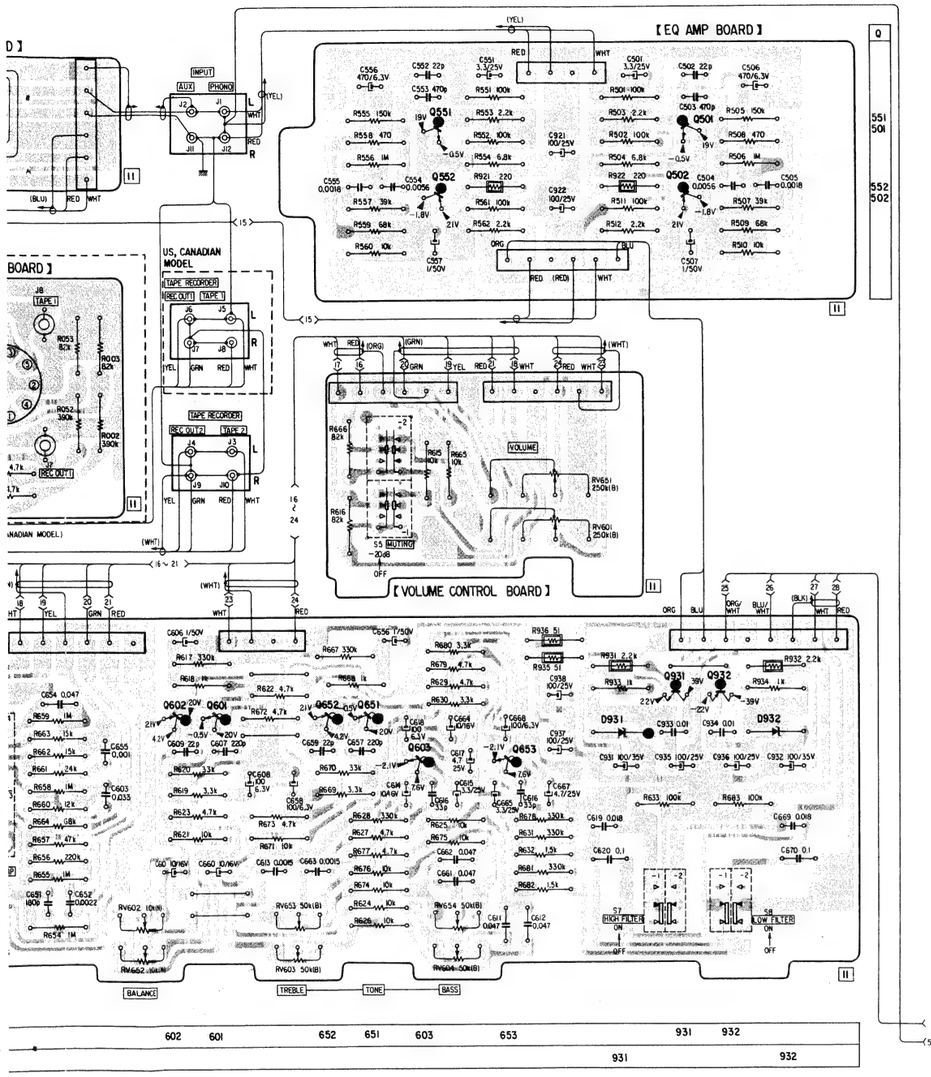


Note:

- : B+ pattern
- : B– pattern

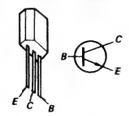


ntrol Amp Circuit Boards –

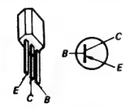


Q501, 551
601, 651 } 2SC1636

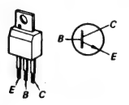
Q603, 653: 2SC632A



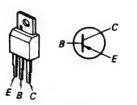
Q502, 552
602, 652 } 2SA705



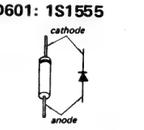
Q931: 2SC1124



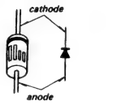
Q932: 2SA706



D601: 1S1555

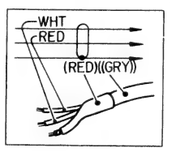


D931, 932: EQA01-21R



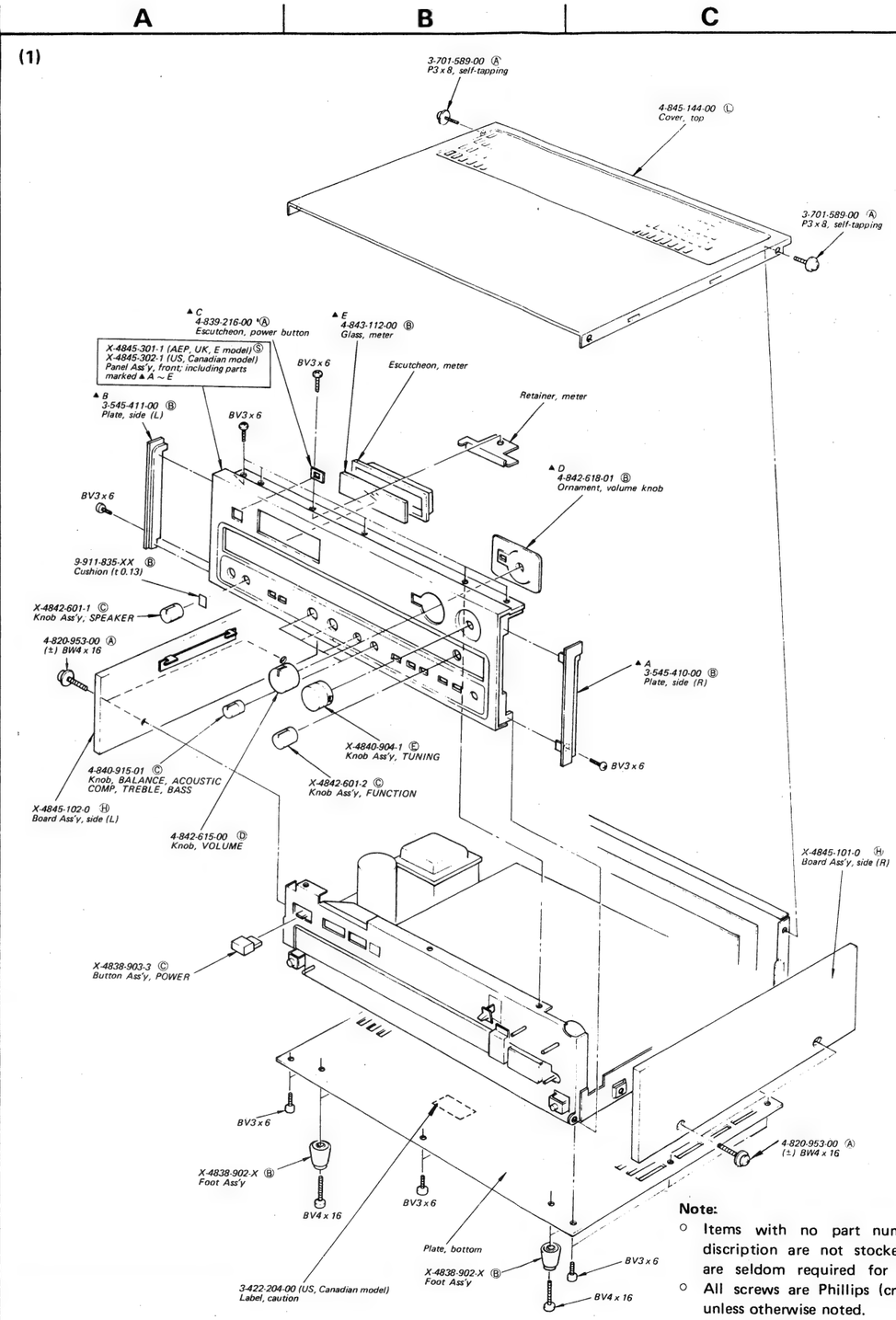
Note:

- : B+ pattern
- : B– pattern



SECTION 5

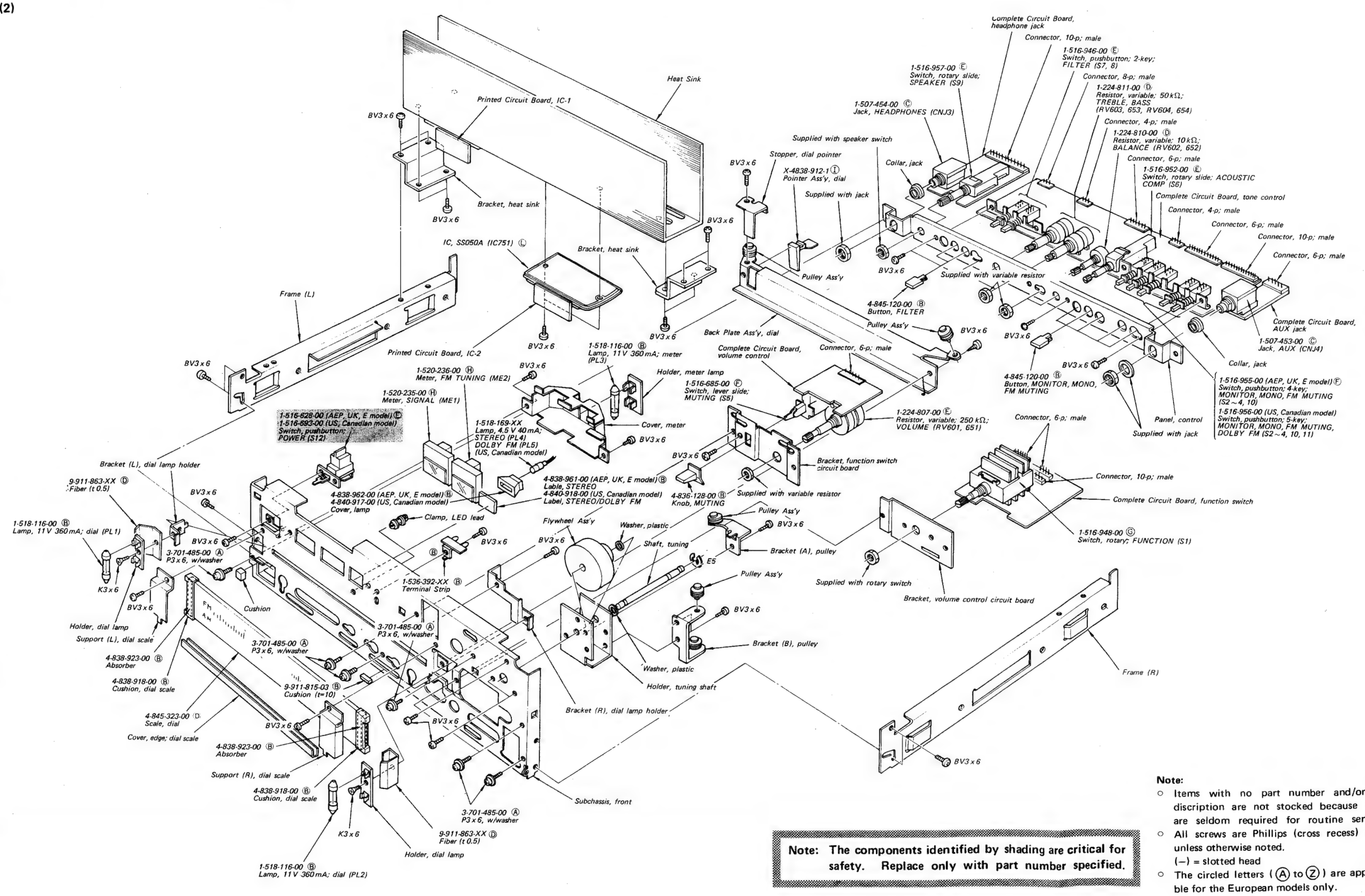
EXPLODED VIEWS



Note:

- Items with no part number and/or no discription are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

(2)

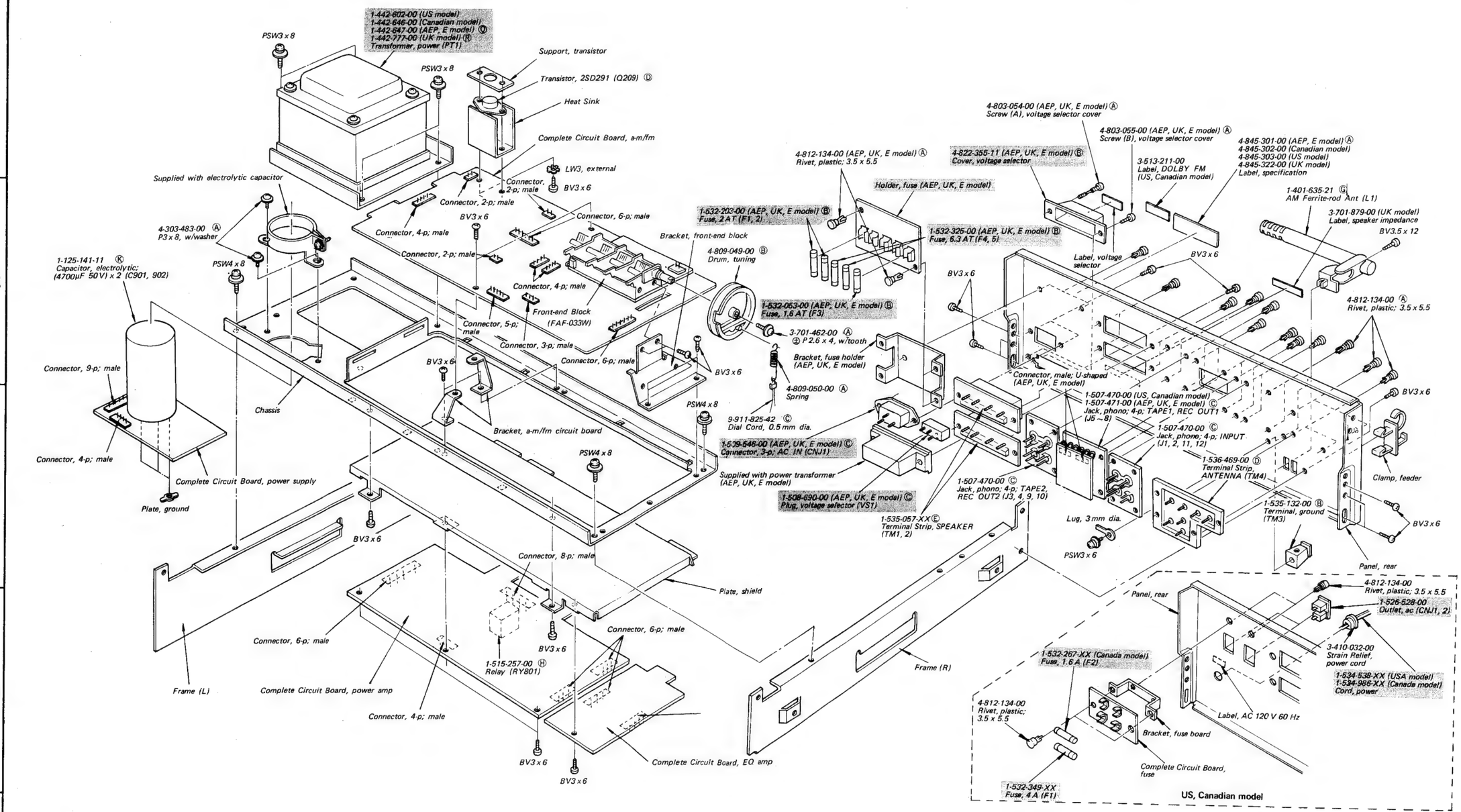


Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note:

- Items with no part number and/or no discription are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

(3)



Note:

- Items with no part number and/or no discription are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

Note: The components identified by shading are critical for safety. Replace only with part number specified.

SECTION 6
ELECTRICAL PARTS LIST

Note: The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
		Transistors
⇒Q201, 202		Ⓑ2SC403C
⇒Q203		Ⓑ2SC632A
Q204		Ⓑ2SC945
⇒Q205, 206		Ⓑ2SC632A
Q207, 208		Ⓑ2SC945
Q209		Ⓓ2SD291
⇒Q210		Ⓑ2SC403C
Q211		Ⓑ2SC945
⇒Q401～403		Ⓑ2SC403C
Q405, 406		Ⓑ2SC710
Q501, 551		Ⓑ2SC1636
Q502, 552		Ⓑ2SA705
Q601, 651		Ⓑ2SC1636
Q602, 652		Ⓑ2SA705
Q603, 653		Ⓑ2SC632A
Q701, 751		Ⓑ2SA705
Q703, 753		Ⓒ2SA896
Q704, 754		Ⓒ2SC1811
⇒Q705, 755		Ⓒ2SA678
⇒Q706, 756, Q707, 757		Ⓑ2SC634A
⇒Q708, 758		Ⓒ2SA678
⇒Q801～803		Ⓒ2SA678
⇒Q804		Ⓑ2SC634A
Q805		Ⓒ2SC1811
Q931		Ⓔ2SC1124
Q932		Ⓒ2SA706
		ICs
IC201		ⒽHA1137W
IC202		ⒿHA1156
IC701, 751		ⓁSS050A

⇒ : Due to replacement parts, the descriptions are different from the diagrams.

Ref. No.	*Part No.*	*Description*
		Diodes
D1		ⒽTX312
⇒D201, 202		Ⓑ1S1555
D203		Ⓑ1T22A
⇒D204		ⒷEQB01-26
D205		Ⓑ10E2
⇒D261		Ⓑ1S1555
⇒D401, 402		Ⓑ1S1555
D403, 404		Ⓑ1T22A
D601		Ⓑ1S1555
D701, 751		ⒷVD1221
D702～705, D752～755		Ⓑ1S1555
D801～803		Ⓑ1S1555
D804		Ⓑ1T243M
D805, 806		Ⓑ1S1555
D901～904		ⒸU05E
D911, 912		Ⓑ10E2
D913, 914		Ⓑ10D2
⇒D931, 932		ⒷEQB01-21
		THERMISTOR
Pth801, 851	1-800-427-00	ⒷPositive
		COILS
L1	1-401-635-21	ⒼAM Ferrite-rod Ant
L201	1-459-152-00	Ⓑ18 μH
L401	1-407-169-XX	Ⓐmicroinductor, 100 μH
L402	1-407-182-XX	Ⓐmicroinductor, 2.2 μH
L403	1-405-656-00	ⒷAM Osc
L404	1-407-178-XX	Ⓐmicroinductor, 1 μH
L405	1-407-182-XX	Ⓐmicroinductor, 2.2 μH

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

Ref. No.	*Part No.*	*Description*
		TRANSFORMERS
B1	1-417-014-31	Ⓑ Balun
IFT201	1-404-029-00	Ⓒ FM Discriminator
IFT401	1-404-014-11	AM IFT (US, Canadian model)
	1-404-014-21	Ⓓ AM IFT (AEP, UK, E model)
IFT402	1-403-149-00	Ⓑ AM IFT
PT1	1-442-602-00	Power (US model)
	1-442-646-00	Power (Canadian model)
	1-442-647-00	Ⓠ Power (AEP, E model)
	1-442-777-00	Ⓡ Power (UK model)
		FILTERS
CF201, 202	1-527-248-XX	Ⓗ Ceramic
LPF201	1-231-219-00	Ⓓ Low-pass
		CAPACITORS

All capacitors are in μF and of electrolytic unless otherwise noted. (p = μμF)
50 and/or less working voltages are omitted except for electrolytic type.

C101	1-121-970-11	Ⓐ 47	16 V	
C102	1-101-924-11	Ⓐ 0.022		ceramic
C201 ~ 203	1-101-924-11	Ⓐ 0.022		ceramic
C206	1-101-924-11	Ⓐ 0.022		ceramic
C207 ~ 209	1-101-925-11	Ⓐ 0.047		ceramic
C210	1-121-391-11	Ⓐ 1	50 V	
C211	1-102-820-11	Ⓐ 330 p		ceramic
C212	1-121-391-11	Ⓐ 1	50 V	
C213	1-121-415-11	Ⓑ 100	16 V	
C214	1-101-925-11	Ⓐ 0.047		ceramic
C215, 216	1-101-924-11	Ⓐ 0.022		ceramic
C217	1-101-925-11	Ⓐ 0.047		ceramic
C218	1-121-726-11	Ⓐ 0.47	50 V	
C219	1-121-392-11	Ⓐ 3.3	25 V	
C220, 221	1-121-651-11	Ⓐ 10	16 V	
C222	1-121-972-11	Ⓑ 220	16 V	
C223	1-121-651-11	Ⓐ 10	16 V	
C224	1-103-717-11	Ⓐ 470 p		polystyrol
C225	1-101-924-11	Ⓐ 0.022		ceramic
C226	1-108-246-12	Ⓐ 0.047		mylar
C227	1-121-651-11	Ⓐ 10	16 V	
C228, 229	1-121-726-11	Ⓐ 0.47	50 V	
C230	1-127-019-11	Ⓑ 0.1	10 V	solid aluminum
C231	1-123-068-11	Ⓑ 220	16 V	
C232, 233	1-108-580-12	Ⓐ 0.011		mylar (AEP, UK, E model)
	1-108-571-12	0.0047		mylar (US, Canadian model)
C234	1-101-924-11	Ⓐ 0.022		ceramic
C235, 236	1-108-573-12	Ⓐ 0.0056		mylar (AEP, UK, E model)
	1-108-581-12	0.012		mylar (US, Canadian model)
C239	1-121-651-11	Ⓐ 10	16 V	
C240	1-127-021-11	Ⓑ 0.33	10 V	solid aluminum
C241	1-101-880-11	Ⓐ 47 p		ceramic
C242	1-121-651-11	Ⓐ 10	16 V	
C243	1-127-021-11	Ⓑ 0.33	10 V	solid aluminum
C244	1-101-880-11	Ⓐ 47 p		ceramic
C245	1-121-651-11	Ⓐ 10	16 V	
C246	1-123-068-11	Ⓑ 220	16 V	
C247	1-121-936-11	Ⓑ 220	25 V	
C251, 252	1-102-732-11	Ⓐ 75 p		ceramic
C261	1-102-959-11	Ⓐ 22 p		ceramic

(US, Canadian model)

C301, 351	1-121-391-11	1	50 V	
C302, 352	1-121-479-11	22	16 V	
C303, 353	1-102-947-11	10 p		ceramic
C305, 355	1-131-198-11	6.8	16 V	tantalum
C307, 357	1-121-409-11	47	16 V	
C308, 358	1-121-391-11	1	50 V	
C309, 359	1-108-244-12	0.033		mylar
C310, 360	1-131-196-11	2.2	20 V	tantalum
C311, 361	1-108-603-12	0.1		mylar
C312, 362	1-108-585-12	0.018		mylar
C313, 363	1-108-587-12	0.022		mylar
C314, 364	1-121-391-11	1	50 V	
C315, 365	1-121-395-11	4.7	25 V	
C316, 366	1-108-230-12	0.0022		mylar
C317, 367	1-121-415-11	100	16 V	
C391	1-121-651-11	10	16 V	

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

Ref. No.	*Part No.*	*Description*		
C401～403	1-101-924-11	Ⓐ 0.022		ceramic
C404	1-121-479-11	Ⓐ 22	16 V	
C405	1-101-924-11	Ⓐ 0.022		ceramic
C406, 407	1-121-450-11	Ⓐ 2.2	50 V	
C408, 409	1-101-924-11	Ⓐ 0.022		ceramic
C410	1-121-352-11	Ⓐ 47	10 V	
C411, 412	1-101-924-11	Ⓐ 0.022		ceramic
C413	1-121-409-11	Ⓐ 47	16 V	
C415	1-108-277-12	Ⓐ 0.001		mylar
C416	1-108-355-12	Ⓐ 0.0056		mylar
C417	1-121-413-11	Ⓐ 100	6.3 V	
C418	1-108-249-12	Ⓐ 0.068		mylar
C419	1-108-239-12	Ⓐ 0.01		mylar
C420	1-121-409-11	Ⓐ 47	16 V	
C421	1-102-953-11	Ⓐ 18 p		ceramic
C422	1-103-714-11	Ⓐ 360 p		polystyrol
C423	1-101-924-11	Ⓐ 0.022		ceramic
C424	1-101-924-11	Ⓐ 0.022		ceramic
C425	1-108-239-12	Ⓐ 0.01		mylar
C426, 431	1-101-924-11	Ⓐ 0.022		ceramic
C501, 551	1-121-913-11	Ⓐ 3.3	25 V	
C502, 552	1-102-959-11	Ⓐ 22 p		ceramic
C503, 553	1-102-824-11	Ⓐ 470 p		ceramic
C504, 554	1-108-573-12	Ⓐ 0.0056		mylar
C505, 555	1-108-561-12	Ⓑ 0.0018		mylar
C506, 556	1-123-077-11	Ⓑ 470	6.3 V	(explosion proof)
C507, 557	1-121-912-11	Ⓐ 1	50 V	
C601, 651	1-102-976-11	Ⓐ 180 p		ceramic
C602, 652	1-108-230-12	Ⓐ 0.0022		mylar
C603, 653	1-108-244-12	Ⓐ 0.033		mylar
C604, 654	1-108-246-12	Ⓐ 0.047		mylar
C605, 655	1-108-227-11	Ⓐ 0.001		mylar
C606, 656	1-121-912-11	Ⓐ 1	50 V	
C607, 657	1-102-978-11	Ⓐ 220 p		ceramic
C608, 658	1-121-413-11	Ⓐ 100	6.3 V	
C609, 659	1-102-959-11	Ⓐ 22 p		ceramic
C610, 660	1-121-916-11	Ⓑ 10	16 V	
C611, 661 C612, 662	1-108-246-12	Ⓐ 0.047		mylar

Ref. No.	*Part No.*	*Description*		
C613, 663	1-108-228-12	Ⓐ 0.0015		mylar
C614, 664	1-121-916-11	Ⓑ 10	16 V	
C615, 665	1-121-913-11	Ⓐ 3.3	25 V	
C616, 666	1-102-963-11	Ⓐ 33 p		ceramic
C617, 667	1-121-915-11	Ⓐ 4.7	25 V	
C618, 668	1-121-413-11	Ⓐ 100	6.3 V	
C619, 669	1-108-585-12	Ⓑ 0.018		mylar
C620, 670	1-108-603-12	Ⓑ 0.1		mylar
C701, 751	1-102-116-11	Ⓐ 680 p		ceramic
C702, 752	1-121-912-11	Ⓐ 1	50 V	
C703, 753	1-123-076-11	Ⓑ 330	6.3 V	
C704, 754	1-102-973-11	Ⓐ 100 p		ceramic
C706, 756	1-121-413-11	Ⓐ 100	6.3 V	
C708, 758 C709, 759	1-123-056-11	Ⓑ 22	50 V	
C710, 760	1-108-244-12	Ⓐ 0.033		mylar
C761	1-121-413-11	Ⓐ 100	6.3 V	
C801	1-121-419-11	Ⓑ 220	6.3 V	
C802	1-121-479-11	Ⓐ 22	16 V	
C803	1-121-419-11	Ⓑ 220	6.3 V	
C804	1-101-004-11	Ⓐ 0.01		ceramic
C901, 902	1-125-141-11	Ⓚ 4700	50 V	
C911, 912	1-121-937-11	Ⓑ 220	50 V	
C913, 914	1-108-251-12	Ⓑ 0.1		mylar
C915, 916	1-121-937-11	Ⓑ 220	50 V	
C921, 922	1-121-935-11	Ⓑ 100	25 V	
C931, 932	1-123-062-11	Ⓑ 100	35 V	
C933, 934	1-108-239-12	Ⓐ 0.01		mylar
C935～938	1-121-935-11	Ⓑ 100	25 V	
C951～954	1-108-433-12	Ⓑ 0.1	200 V	mylar
CT401, 402	1-141-147-XX	Ⓑ 15 p		trimmer

RESISTORS

All resistors are in Ω. Regular-type ¼W carbon resistors are omitted.
Check the schematic diagram for the resistance values.
(k = 1000, M = 1000 k)

R1	1-202-719-11	1M	½W	composition (US, Canadian model)

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

Ref. No.	*Part No.*	*Description*			
R101	1-211-530-11	Ⓐ 220	¼ W	carbon (nonflammable)	
R208	1-211-518-11	Ⓐ 68	¼ W	carbon (nonflammable)	
R214	1-211-524-11	Ⓐ 120	¼ W	carbon (nonflammable)	
R236	1-202-559-11	Ⓐ 270	½ W	composition (nonflammable)	
R237, 242	1-211-522-11	Ⓐ 100	¼ W	carbon (nonflammable)	
R314, 364	1-246-486-11	3.6 k ±2%	¼ W	carbon (US, Canadian model)	
R318, 368	1-246-472-11	910 ±2%	¼ W	carbon (US, Canadian model)	
R319, 369	1-246-464-11	430 ±2%	¼ W	carbon (US, Canadian model)	
R322, 372	1-211-522-11	100	¼ W	carbon (nonflammable) (US, Canadian model)	
R401	1-244-891-11	5.6 k	½ W	carbon (US, Canadian model)	
R419, 424	1-211-522-11	Ⓐ 100	¼ W	carbon (nonflammable)	
R603	1-202-561-11	330	½ W	composition (US, Canadian model)	
R706, 756	1-211-514-11	Ⓐ 47	¼ W	carbon (nonflammable)	
R712, 762 R713, 763	1-211-538-11	Ⓐ 470	¼ W	carbon (nonflammable)	
R715, 765	1-202-525-11	Ⓐ 10	½ W	composition	
R716, 766	1-202-517-11	Ⓐ 4.7	½ W	composition	
R718, 719	1-202-565-11	Ⓐ 470	½ W	composition	
R767	1-202-595-11	Ⓐ 8.2 k	½ W	composition	
R768, 769	1-202-565-11	Ⓐ 470	½ W	composition	
R805	1-211-515-11	Ⓐ 51	¼ W	carbon (nonflammable)	
R808	1-202-597-11	Ⓐ 10 k	½ W	composition	
R812	1-202-561-11	Ⓐ 330	½ W	composition	
R813	1-211-538-11	Ⓐ 470	¼ W	carbon (nonflammable)	
R911, 912	1-212-857-11	Ⓐ 10	¼ W	fusible	
R913	1-211-582-11	Ⓐ 4.7	½ W	carbon (nonflammable)	
R914	1-213-213-11	Ⓑ 18	1 W	fusible	
R915, 916	1-211-515-11	Ⓐ 51	¼ W	carbon (nonflammable)	
R921, 922	1-211-530-11	Ⓐ 220	¼ W	carbon (nonflammable)	
R931, 932	1-211-945-11	Ⓐ 2.2 k	¼ W	carbon (nonflammable)	
R935, 936	1-211-515-11	Ⓐ 51	¼ W	carbon (nonflammable)	
RT201	1-224-647-XX	Ⓑ 47 k		adjustable	
RT202	1-224-648-XX	Ⓑ 100 k		adjustable	
RT203	1-224-644-XX	Ⓑ 4.7 k		adjustable	
RT204	1-224-647-XX	Ⓑ 47 k		adjustable	
RT205	1-224-647-XX	Ⓑ 47 k		adjustable	
RV601, 651	1-224-807-00	Ⓔ 250 k		variable, VOLUME	
RV602, 652	1-224-810-00	Ⓓ 10 k		variable, BALANCE	
RV603, 653 RV604, 654	1-224-811-00	Ⓓ 50 k		variable, TREBLE, BASS	

SWITCHES

S1	1-516-948-00	Ⓖ	Rotary, FUNCTION
S2～4, 10	1-516-955-00	Ⓕ	Pushbutton, 4-key; MONITOR, MONO, FM MUTING (AEP, UK, E model)
S2～4, 10, 11	1-516-956-00		Pushbutton, 5-key; MONITOR, MONO, FM MUTING, DOLBY FM (US, Canadian model)
S5	1-516-685-00	Ⓕ	Lever Slide, MUTING
S6	1-516-952-00	Ⓔ	Rotary Slide, ACOUSTIC COMP
S7, 8	1-516-946-00	Ⓔ	Pushbutton, 2-key; FILTER
S9	1-516-957-00	Ⓔ	Rotary Slide, SPEAKER
S12	1-516-628-00	Ⓔ	Pushbutton; POWER (AEP, UK, E model)
	1-516-693-00		Pushbutton; POWER (US, Canadian model)
SE1, 2	1-516-954-00	Ⓑ	De-emphasis (AEP, UK, E model)

FUSES

F1	1-532-349-XX	4 A (US, Canadian model)

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: The circled letters (Ⓐ to Ⓩ) are applicable for the European models only.

Ref. No.	*Part No.*	*Description*
F2	1-532-267-XX	1.6 A (Canadian model)
F1, 2	1-532-203-00	Ⓑ 2 AT (AEP, UK, E model)
F3	1-532-053-00	Ⓑ 1.6 AT (AEP, UK, E model)
F4, 5	1-532-325-00	Ⓑ 6.3 AT (AEP, UK, E model)
	JACKS	
CNJ1, 2	1-526-528-00	AC OUTLET (US, Canadian model)
CNJ1	1-509-546-00	Ⓒ Connector, 3-p; AC IN (AEP, UK, E model)
CNJ2	1-509-549-00	Ⓑ Connector, REC/PB (AEP, UK, E model)
CNJ3	1-507-454-00	Ⓒ HEADPHONES
CNJ4	1-507-453-00	Ⓒ AUX
J1, 2 J11, 12	1-507-470-00	Ⓒ Phono, 4-p; PHONO, AUX
J3, 4 J9, 10	1-507-470-00	Ⓒ Phono, 4-p; TAPE 2, REC OUT 2
J5～8	1-507-471-00	Ⓒ Phono, 4-p; TAPE 1, REC OUT 1 (AEP, UK, E model)
	1-507-470-00	Phono, 4-p; TAPE 1, REC OUT 1 (US, Canadian model)

Ref. No.	*Part No.*	*Description*
	MISCELLANEOUS	
CP1	1-231-057-31	Encapsulated Component (US, Canadian model)
ME1	1-520-235-00	Ⓗ Meter, SIGNAL
ME2	1-520-236-00	Ⓗ Meter, FM TUNING
PL1～3	1-518-116-00	Ⓑ Lamp, 11 V 360 mA; dial, meter
PL4	1-518-169-XX	Ⓑ Lamp, 4.5 V 40 mA; STEREO
PL5	1-518-169-XX	Lamp, 4.5 V 50 mA, DOLBY FM (US, Canadian model)
RY801	1-515-257-00	Ⓗ Relay
TM1, 2	1-535-057-XX	Ⓔ Terminal Strip, SPEAKER
TM3	1-535-132-00	Ⓑ Terminal, ground
TM4	1-536-469-00	Ⓓ Terminal Strip, ANTENNA
VS1	1-508-690-00	Ⓒ Plug, voltage selector (AEP, UK, E model)
	1-534-538-XX	Cord, power (US model)
	1-534-986-XX	Cord, power (Canadian model)
	1-536-392-XX	Ⓑ Terminal Strip

ACCESSORIES AND PACKING MATERIALS

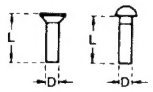
Part No.	*Description*
X-4490-002-2	Ⓑ Cloth Ass'y, polishing
1-501-161-00	Ⓕ Ribbon Antenna, fm
1-506-113-00	Ⓑ Plug, shorting
1-526-565-00	Ⓑ Adaptor, ac plug (E model)
1-534-754-00	Ⓔ Cord, power (E model)
1-534-819-00	Ⓖ Cord, power; 3-p (UK model)
3-780-941-11	Ⓕ Manual, instruction (AEP model)
3-780-941-12	Ⓕ Manual, instruction (UK, E model)
3-780-941-21	Manual, instruction (US, Canadian model)
3-793-991-31	Manual, instruction; French (Canadian model)
4-828-909-00	Ⓑ Bag, plastic; unit
4-845-131-00	Ⓒ Cushion (US, Canadian, AEP, E model)
4-845-306-00	Ⓗ Carton (AEP, E model)
4-845-307-00	Carton (US, Canadian model)
4-845-324-00	Ⓒ Cushion (UK model)
4-845-325-00	Ⓗ Carton (UK model)

Note: The components identified by shading are critical for safety. Replace only with part number specified.

HARDWARE NOMENCLATURE

Screw:

P 3 x 10
- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring:

N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

9-958-342-02

Sony Corporation

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78G0507-3
Printed in Japan